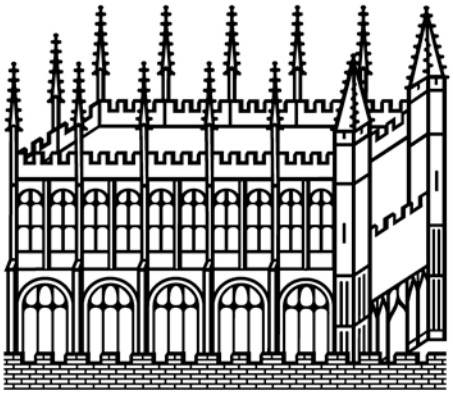

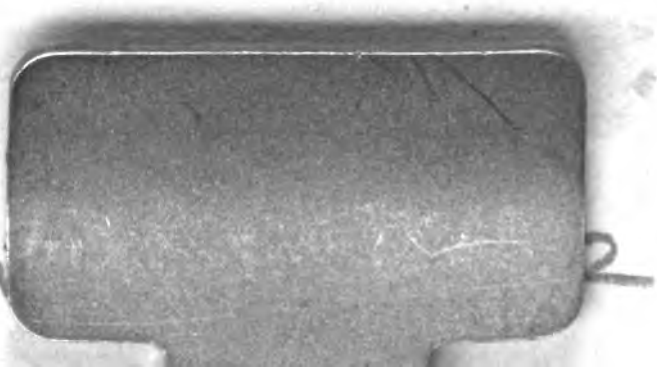

VISIT TO GROVE COTTAGE;

AND THE

INDIA CABINET OPENED.

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INDIA CABINET.

"Three Shelves containing a choice collection of natures ever varying productions nicely arranged."

page 34.

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GROVE COTTAGE;

AND

THE INDIA CABINET OPENED.

A New Edition.

BY THE AUTHOR OF "FRUITS OF ENTERPRIZE,"
"EARLY RECOLLECTIONS,"

LONDON:
JOHN HARRIS,
CORNER OF ST. PAUL'S CHURCH-YARD.

VISIT

TO

GROVE COTTAGE.

THE DEPARTURE.

"CAROLINE, my love, it is six o'clock!" said Mr. Somerset, as he knocked at the door of his little girl's room, one fine morning in June. Caroline did not wait for a second summons, but exclaimed, in a more animated tone than is usual at so early an hour, "I shall be ready in a minute or two, papa;" and no sooner had the words passed her lips than she roused her sister Emily, who was still asleep, jumped out of bed, and began to put on her shoes and stockings. "This delightful morning is come at last!" said she; "hark! do not you hear the chaise driving

to the door?" and as she spoke she advanced towards the window, drew aside the curtains, and found that a stage waggon had attracted her attention. Presently the wheels of a hackney coach were mistaken for those of her papa's gig; and soon after the bell of the dustman announced that his cart had deceived her.

But where were these little girls going? and why were they rising so early? and where did they live? our young readers are, perhaps, ready to inquire.

They shall hear.

Caroline and Emily Somerset were the daughters of a gentleman who resided in Russel Square. They had seldom been in the country, and the garden in the square was their principal walking-place. Mr. Somerset was about to remove into the country, and, as his family was large, he had purchased a commodious house in Worcestershire, whither he intended them to repair towards the latter end of the summer. But many alterations and improvements were wanting before it could be rendered fit for the family mansion, and he had his house in Russel Square on a lease, which was now nearly expired; it

was therefore agreed that the children should pay some long talked of visits in the interim.

Now those who have a clear comprehension, and can readily enter into family arrangements, may read the following page; but those who cannot had better skip it, and save themselves any unnecessary trouble, as it certainly requires no common degree of attention duly to understand so many.

Mrs. Somerset herself, with her three youngest children and their nursemaids, were to repair to the house of her father, in the environs of Matlock, in the course of a fortnight; and Mr. Somerset, on the morning of which we have been speaking, was about to set out with Caroline and Emily for Grove Cottage, near the town of Egremont, in Cumberland, the residence of some particular friends of their parents, by whom they had been invited to spend a few months; a proposal which Mrs. Somerset gladly accepted, as she knew her daughters would reap advantages, of which, owing to their town residence, their having as yet had no governess, and her own delicate state of health, they had hitherto been deprived. It was the idea of this long journey that occasioned so much joy to the little girls,

who, never having been far from home, anticipated it with eager expectation. As Mr. Somerset returned from the North, he was to take Matlock in his way, in order to see that Mrs. Somerset and her little flock were arrived in safety, and comfortably settled for the summer; and his two eldest sons, Edward and Augustus, were then to meet him in Birmingham, and be placed, for a short time, at a respectable academy. After having thus disposed of his family, he intended returning to London, to settle final arrangements there; and it was hoped that, in the course of three or four months, Aston Hall would be ready for the reception of the whole group, and so commodious as to admit of private tuition. Mrs. Somerset's health being delicate, and her domestic avocations numerous, she had not sufficient leisure to devote her time to the education of her children. She had therefore engaged a governess for the little girls, while Mr. Somerset proposed to take upon himself the tuition of his sons.

Having explained these new arrangements, we will return to Caroline and Emily, who were soon quickly dressed, and ran down into the

parlour directly the bell was heard. "I must make breakfast for you to-day, papa," said Caroline, drawing her chair to the table in great spirits. "Here is your cocoa."

At this moment a servant appeared at the door, informing them that the gig was ready. Caroline put down her cup, and Emily jumped up, exclaiming, "I really do not want any breakfast. I cannot take any cocoa. Where is your hat, my dear Caroline?—and where are my gloves? I knew we should not be ready in time, though we got up directly papa called us:—and we have not kissed mamma, nor the little ones."

"No such great haste, my dear," said Mr. Somerset, taking hold of his daughter's hand, and replacing her on her seat. "No little girl can be fit for a long journey, if she cannot eat a good breakfast before she sets out."

The children replaced themselves, at their father's request; but the thought of their ride took away their appetite, and before he had done they were out of the room, now this way and now that, running up stairs to take leave of their mother, and then to the nursery to kiss the children, and were again skipping along the gallery, equip-

ped in their straw hats and travelling plaids, when Mr. Somerset's voice was heard in the hall, and the names of Caroline and Emily were uttered. They scarcely needed the summons, but with light hearts and nimble steps tripped down stairs, and were soon seated in the chaise, each with a little basket in her lap. Mr. Somerset took the reins, and they were presently out of Russel Square. The morning was fine, and when they reached the environs of the city the sun began to shine with unusual brightness; the children were glad to leave the smoky streets, and to inhale the pure fresh air. The trees and hedges looked beautiful, being perfectly clothed in their mantle of green; the flowers of all sorts seemed to expand their petals under the cheering rays of a warm sun; the wild cherry unfolded its large white clusters of blossoms, and the blue ivy-leaved campanula enamelled the banks by the road-side; the little birds warbled their songs of gratitude and joy in full chorus, and gladness seemed to characterise every living thing.

Caroline and Emily admired all they saw;—the trees—the parks—the fields—a rustic bridge, or the smoke from a cottage chimney, rising

gracefully above the tall elms that surrounded it, by turns attracted their observation; and, full of youthful glee, they accounted this the happiest day of their lives.

"Look at that beautiful wreath of wild roses, Emily," said Caroline, "and at the woodbine—how delightfully it smells! a hundred times sweeter than all the hyacinths we had in glasses at home, or than all the flowers in the garden at Russel Square."

"And look, papa," exclaimed Emily, "at that pretty cottage yonder, with its ivy-covered porch, and the woman spinning at the door, and her children at play on the green—how happy they appear!—and look at the village spire peeping behind those tall trees!—hark! the bell is ringing. Oh! now we are come to a town—what town is this, papa?"

"This is Uxbridge," said Mr. Somerset, "and here my young travellers must take another breakfast. I hope they will convince me that a ride of fifteen miles at so early an hour has done them good."

Mr. Somerset drove to the inn, and when his little girls had made a hearty meal of toast and

coffee, the chaise was again ordered, and they proceeded forwards.

The beautiful scenery between Uxbridge and Wycombe delighted them; their father pointed out the charming views, the smooth shaven lawns, the elegant seats, and waving woods, with which it is interspersed; and in the evening tall towers, turrets, battlements, and spires, apprised them of their approach to Oxford.

"We have left Middlesex and Buckinghamshire, and are now approaching the capital of Oxfordshire," said Mr. Somerset, "the seat of learning, science, and art. Here many eminent characters, whose names adorn the roll of history, lived, and devoted their time to the acquisition of knowledge which has rendered their names immortal."

As Mr. Somerset spoke, they crossed an elegant bridge over the river Isis, and advanced up High Street, which is said to be the finest street in Europe. It is wide and very long, and its sides are adorned by venerable colleges and noble edifices, which, having been founded for the generous purpose of promoting knowledge, display the triumph of learning with grateful

magnificence. The foliage of the tall trees belonging to the walks and gardens, intermixed with the buildings, and the collegians walking about in their long flowing robes and square caps covered with black cloth, give this celebrated city an air not only of grandeur, but also of picturesque beauty.

"Oxford is one of our Universities," continued their father, "and those gentlemen whom you remark, on account of their peculiar dress, are the students; some of their caps are ornamented with a tassel of gold, to distinguish them as the sons of noblemen."

"What do you mean by a *University*, papa?" said Caroline.

"Universities, or colleges, are establishments instituted for the promotion of the arts and sciences," replied Mr. Somerset. "We have only two universities in England: Oxford and Cambridge. In these institutions the whole extent of human learning is generally taught; but chiefly philosophy, divinity, physic, law, and the learned languages."

We shall have time to walk about a little to-morrow, as I do not intend proceeding till the

next day, and I will take you to see some of the colleges.

But as we have not room to describe all they saw, the numerous public edifices they visited, the delightful walks in which they rambled, &c., we shall proceed to the day appointed for them to leave this interesting city.

THE JOURNEY.

The chaise was ordered at an early hour on Wednesday morning, as Mr. Somerset was anxious to reach Worcester, in order to devote the following day to some arrangements respecting Aston Hall.

Caroline and Emily were, contrary to their usual custom, as quickly dressed as they had been on the two preceding days, and set off with renewed vigour after a comfortable night's rest. Fresh objects continually attracted their attention, and, after a delightful ride through Blenheim Park, the seat of the Duke of Marlborough, and passing through two or three little towns, they reached the brow of a long hill, called Broadway Hill, in the afternoon. Here

an extensive view presented itself—a wide tract of champaign country opened before them; the Malvern Hills were distinctly seen in the distance; the rich vale of Evesham, famed for its fertility, and the little town of Broadway, lay below them. As they travelled through this beautiful country, Caroline was delighted with the numerous orchards of apple and pear trees on each side of the road; and her father remarked that Worcestershire is famous for its cyder and perry, which are made from the juice of these fruits. Emily admired the beautiful hop-yards; in which enclosures long poles are fixed into the ground in rows. Each separate plant has a pole, up which it creeps, and having reached the top, falls down in curly tresses. "The fruit hangs in little clusters, and is of a leafy substance, about the size of an acorn," said Mr. Somerset. "I hope you will see a hop-yard in the time of vintage."

"What do you mean by that, papa?"

"I mean at the time when the hops are ripe, and ready for picking. You would be much amused to see thirty or forty children, about your own age, and men and women too, as busy

as possible picking them from their tender stalks. The men cut them off at the root, and the rest pick and collect them together, which they do into their little blue aprons, and then empty them altogether into large baskets."

"But of what use are hops, papa?"

"They are used in the making of beer, and impart that bitter flavour to which you have such a dislike," replied Mr. Somerset.

The evening of the second day after leaving Oxford was far advanced, when our party entered the wide and neatly paved streets of Worcester. The children were really sleepy, though unwilling to own it; and being soon placed in a comfortable bed, sunk into a sound slumber. Their father thought it best not to disturb them too early the next morning, after the fatigue they had undergone on the preceding day: he therefore left them under the care of their hostess, and rode over to Aston Hall while they were still asleep.

Towards eleven o'clock he returned to the inn, and found them waiting in anxious expectation for his arrival.

"Well, my little girls," said he, "are you

ready to take a walk in the city? What object presents most attractions? What do you wish to see first?"

"Aston Hall! Aston Hall, papa!" exclaimed Emily, in a lively tone; "cannot you take us to Aston Hall? We used to see plenty of shops, and churches, and public buildings, and such like places, in London; I would much rather go to Aston Hall. I want to fix upon a border for my own little garden, and to see the green-house; I wonder whether there are any geraniums in it—I am so fond of geraniums. How charming it will be to live in the country!"

"Provided we have a green-house, and some geraniums in it, Emily," said her father.

"Oh no, papa, I do not mean that my pleasure will depend upon them alone; but you know it will be so delightful to have a green-house! and mamma says, that she will give us each a little green watering-pot, and that we shall take care of her plants. Caroline, what do you wish to see?"

"I have sometimes heard mamma say that our tea-things came from Worcester, and that

Worcester is famous for its china; and though I want to see Aston Hall as much as Emily does, I would rather see a china manufactory."

"Now, how shall the matter be decided upon?" said Mr. Somerset; "I will leave it to you to settle it between yourselves."

The two little girls looked at each other, as though each ardently bent on seeing the object she had in view. However, good humour prevailed, and with an amiable condescension each offered to give up her own project and accede to that of her sister.

"I will go to Aston Hall, if you please, my dear Emily," said Caroline. "I want to see the garden and the green-house as much as you do, and perhaps we shall be able to see the china manufactory another time."

"No, no, no!" replied Emily, with generous warmth; "you are older than I am, and I will go wherever you like. Papa, we wish to see how cups and saucers are made."

"Then your wish shall be gratified; for I am always pleased to meet with an opportunity of rewarding good temper," said Mr. Somerset, taking the hand of each of his little girls, whose

eyes sparkled with pleasure at this well-earned praise; and they proceeded along the streets of the elegant city of Worcester, towards Chamberlain's china manufactory.

On arriving at the place, they were first shown a mill, resembling a bark-mill, in which the stones of which china is made are reduced to as fine a powder as possible.

Perhaps some of our young readers will exclaim, as Caroline and Emily did,—"What! is china made of stones?"—It is nevertheless true: the composition of which our most beautiful sets of china are formed is made of two different sorts of stone powdered and mixed together with water. The surprising dexterity with which a man formed cups and saucers, basins, &c., of this paste, amused the children exceedingly; he put a little lump of it upon an instrument called a wheel, and then gave it a turn, shaping the vessel at the same time with his hand, when it seemed to spring up instantaneously, as if by magic. Another workman then took it in hand, and turned it round on a wheel in the same manner as the other had done, only scraping it with a knife where it was too thick. The vessel

was by this time ready for baking, for which purpose it was put into a mould, and when nearly hard was taken out of the oven, and dipped into a thin liquid, which looked, as Emily said, like whitewash, and which was done to give it that varnished appearance that it assumes after having been burnt once more, and renders it fit for painting. The children were next shown to the painting-room, where the novelty of the scene afforded much entertainment; one old man, with green spectacles on, was ornamenting a teacup with beautiful birds, and a pale-looking woman was painting a vase, upon which the flowers seemed to grow beneath her touch, while twenty or thirty people, stationed at little tables all round the sides of the room, were employed in a similar manner: they had all an unhealthy appearance, which showed that the confinement did not suit them. Mr. Somerset hastened his children from the close apartment devoted to this purpose, and told them that, when painted, the china would be again burnt to make the colours stand. Lastly, the gold, which had hitherto looked like yellow paint, would be burnished, that is, well rubbed,

and the china would then be completed and ready for sale.

The little girls were much gratified with inspecting this curious manufacture; for it was so entirely fresh, that novelty, which arrays all youthful pleasures in double lustre, added much to its interest. Emily said she no longer regretted not having seen Aston Hall; and Caroline said that she loved Emily better than ever, for the good temper she had shown in giving up her own wish to oblige her sister.

The chaise was ordered at an early hour the next morning, and our little party proceeded to Birmingham. No sooner had they entered this large and populous place, than the hammering of presses, the whirling of wheels, the clatter of engines, the rattling of coaches, the bustle in the streets, and the black smoke that poured in columns from the numerous furnaces, made them fancy they were again in London: and indeed it does bear a strong resemblance to some parts of the metropolis.

"This town," said their father, "is sometimes styled the grand toy-shop of Europe, and I intend staying a day or two in order to show you

the various manufactures for which it is celebrated. The works that are carried on here are principally in iron, steel, and other metals, as well as glass and japan-ware. You will see children of your own age employed in making watch-chains, bracelets, necklaces, buttons, snuff-boxes, and buckles, and using their little fingers with as much dexterity as you do in dressing your doll, or playing a game of drafts."

But as to describe minutely all our travellers saw would be tedious, and probably less interesting to our young readers than the manner in which they employed themselves when settled in the country, we shall not state the particulars of the numerous objects that attracted their attention; but suffice it to say,that after having gratified their curiosity in Birmingham, they proceeded by short and easy stages until they arrived at the bustling and populous town of Manchester, a place famed for its cotton manufactories; whence, after spending a day or two, they travelled forwards in excellent spirits, until high mountains topped with clouds, beautiful lakes, and romantic scenery, foretold that they were approaching the confines of Cumberland, and

had already nearly reached the place of destination.

THE ARRIVAL AT GROVE COTTAGE.

THE sun was declining behind the western mountains and tinging the trees with a yellow lustre, when our party, having passed through the little town of Egremont, proceeded along a delightful country until they came beneath a hill covered with thick wood, when Mr. Somerset stopped the chaise, and pointed through an opening to an elegant building, just seen in the distance, and apparently in the midst of pleasure-grounds and gardens.

"There," said he, "is Grove Cottage."

"Grove Cottage! Grove Cottage!" exclaimed the children in a breath; "we are just there. What a charming place it must be! How soon shall we reach it, papa?"

"We have some miles yet to go," said their father.

"Some miles!" repeated Emily—"Oh, what a long way, and I thought we were just at it! There! there is a mile-stone—Egremont, four

miles," continued she, glancing at it as they rode past.—" Grove Cottage is ten miles from Egremont, so we have six to go. I wish we were there. Do you know the names of the young ladies—of the Miss F.'s, papa?"

" I recollect the eldest daughter," said Mr. Somerset; " I suppose she is now grown up, and undertakes the tuition of her younger sisters, of whom, if I am not mistaken, there are several, though in truth I cannot recollect their names:—there may be a Caroline, or an Emily, for aught I know; those of my own little darlings are alone imprinted on my memory."

" These miles seem longer than any during our whole journey," said Caroline. " There is a *something* in the road yonder, just between those two old oaks—I dare say it is a mile-stone."

But Caroline's mile-stone proved to be a milk-maid returning with her pails of new milk, and tuning a lively song. The children, who had alighted from the chaise in order to walk up a steep hill, begged for a draught; with which she willingly supplied them, by means of a little tin cup attached to one of the pails.

" How delightful, how refreshing it is!" said

Emily, who had never before tasted new milk; and when their father had given the good-natured milk-maid a handsome present, they proceeded.

"Now, there is actually a mile-stone!" exclaimed Caroline, running towards it. "Yes; Egremont, eight miles. How is this, papa? We are much nearer Grove Cottage than I expected. I suppose I mistook the number on the last mile-stone, and called No. 7 No. 4:—so we have scarcely two miles to go."

"I believe you made an error in your calculations," said Mr. Somerset, smiling, "for we have indeed nearly reached our place of destination; these shrubberies on each side of the road foretel our approach to Grove Cottage. Do you not see the chimneys at a distance, rising above the brow of the hill?"

"Yes, papa, distinctly, plainly—very plainly—ah! now the windows come in sight, for the sun just sinking throws a shade of light upon them—and now the portico;—we shall soon be there!"

The evening was calm and serene as a summer evening could possibly be; the feathered

choristers warbled in the groves, and tuned their little voices to songs of grateful joy; the hearts of Caroline and Emily beat high with expected pleasure as they drew nearer the end of their journey, and the delightful scenes around them were in perfect unison with their feelings. The waggon, tinkling slowly along, was heard in the distance; the sound of the sheep-bell seemed to be collecting the wandering flock; the melodious note of the nightingale, seated upon a lonely shrub in the valley, appeared to welcome the strangers; the trees and hedges looked as beautiful as they had done on the morning of their departure from London; and presently a verdant lawn, on which the laburnums threw their long clusters of yellow blossoms, announced that Grove Cottage was just at hand. A sudden turn in the road brought them to the gates, which were thrown open, and they drove rapidly along the wide carriage-road towards the house. The lawn had just been mown, and a group of rosy children were playing under the trees among the new made hay; but the moment the wheels of a carriage were heard, they relinquished their games and were seen running towards it.

The house now appeared in sight. A green veranda, covered with fragrant flowers that wafted their fragrance in the open air, extended along the front; the pillars were overgrown with the sweet-scented clematis, and intermixed with the brilliant scarlet blossoms of the Cyprus vine, among which the jasmine's stars of silvery white peeped in profusion, forming a contrast to the brown bell-shaped blossoms of the cobia scandens. The children were ready to fancy themselves in fairy land! The chaise stopped—the hall bell rang—and the whole family were ready in a moment to hail the arrival of their young visitors. Mr. and Mrs. F., followed by a train of blooming children, welcomed them to Grove Cottage, and led them into the drawing-room, the windows of which were down to the ground, and, being thrown open, the roses and other fragrant shrubs scattered their sweetness in every gentle breeze. Caroline and Emily were so much delighted with the scene, that they almost forgot where they were. Miss F. soon came forwards, and introduced three of her sisters by their names, Laura, Ellen, and Anna; they appeared to be about the age of the Somersets,

and as no reserve or restraint existed on either side, they were presently acquainted with each other, and soon became cordial friends. Tea was ordered: and during this social meal, the younger children, who had not yet dared to meet the eye of strangers, came peeping from behind the clematis-covered pillars, in at the drawing-room window, first looking half afraid, and then venturing to smile, when Emily, who was nearest, returned a similar salute.

"Come, little Augusta," said Miss F., "you have nothing to fear; come and shake hands with your new friend."

Augusta, thus encouraged by her sister, held her hand to the sweet girl, who stooped down to kiss the fair and rosy cheek that was turned towards her; and, presently, another little creature, who had hitherto kept at a respectful distance on the lawn, observing her companion's courage, came forward, *sans cérémonie*, whispering, "Kiss me too."

It was not long before they made their appearance both together, and Caroline and Emily had now the much wished-for pleasure of becoming acquainted with the names of the whole

group. Laura, Ellen, Anna, Augusta, and Lucy, were the pupils of their elder sister Emmeline, under whose kind tuition they were making rapid progress in all that is good. They were taught to look up to her for advice and instruction, to place full confidence in her judgment, to esteem her opinion beyond that of every other person except their parents, and to love her with an affection seldom equalled.

It was too late in the evening for the children to survey the beauties of Grove Cottage; they retired to rest at an early hour, arose the following morning with renewed spirits, and hastened down stairs as soon as they heard the cheerful sound of little voices in the hall.

Laura, Ellen, and Anna were waiting to walk with them before breakfast. Their affability and good-nature had already made Caroline and Emily consider them in the light of sisters, and arm-in-arm they sallied down the hall steps, and through the veranda into the beautiful pleasure-ground.

It was laid out with much taste, and in such a manner as to afford every convenience for the amusement of the children. In a retired spot,

shaded by high trees, a green painted swing was erected; and farther on, obscured from the sight by a thick holly hedge, were the little plots of ground allotted to their cultivation.

"There are our gardens," said Ellen. "Look at this almond tree!—this bed is mine—and that is Laura's—and yonder is Anna's. See what fine sweet-peas she has!"

"And we have not only gardens for ourselves," said the lively Anna, "but some are prepared for you also. These two little borders are to be under your care while you live with us; you see there are many flowers already, and there will be many more in blossom soon; and look at the new fork and rake which papa has given us."

"How delightful it will be!" exclaimed Caroline. "Grove Cottage is a hundred times prettier than I anticipated. But where is your green-house?"

"Oh! that is in the garden—come this way." The smiling girls now followed their young companions through a door covered with rustic trellis-work into the garden, and entered a long range of hot-houses, in which rich and

tempting clusters of grapes were hanging in profusion: thence they proceeded to the green-house, where Emily was gratified by seeing as many geraniums as she could wish; and leaving it by a door at the farther end, they re-entered the grounds, crossed a bridge over the fish pond, and turning through a winding walk, came to the lawn, upon which stood a very large cage of painted wire, divided into several compartments, each of which was occupied by birds of various sorts.

Caroline had just begun to admire the silver pheasants, and Emily was giving some crumbs of grated bread to the little French partridges, which were tame enough to eat out of her hand, when the breakfast bell was heard; and, obedient to the summons, the young group hastened together towards the house.

"Oh, papa," exclaimed the Somersets, running to their father the moment they entered the room, "this is a most charming place! We are very happy; and we have been looking at the swing, and garden, and the green-house, and the geraniums, which are a hundred times more beautiful than those in Russel Square: and the

cage—what do you call it, Laura?—in which a great number of birds are kept; and some of them are so tame as to eat out of my hand.—I wish you could stay with us, papa, and then we should be quite happy!—But what did you call that great cage, Ellen?"

"An aviary."

"Yes, yes, an aviary—that means a place in which birds are kept. I wish Edward could see the aviary, he is so fond of birds; and I wish mamma could see the green-house, for she is very fond of flowers."

"We must make your little girls botanists whilst they are with us, I believe, Sir," said Mrs. F. "Botany is a study in which my children take a peculiar delight; and I believe you will wish Caroline and Emily's amusements and pursuits to be associated with those of my daughters."

Mr. Somerset bowed assent.

The children did not feel much more relish for breakfast than they had done on the morning of their departure from London; but when the things were removed, and Mr. Somerset's chaise

was announced, it must be owned that the tears came into their eyes, and their joy seemed damped for a few moments; for never before had they been separated from both their parents. Their father appeared to be under the influence of similar emotions: but as he bade them adieu, he felt a secret assurance that they were under the protection of the kindest of friends, and that they would, under the tuition of the gentle Emmeline, reap advantages of which they had hitherto been deprived; for he was aware that their education had been neglected, and could not but rejoice in the thought that their advantages as to intellectual attainments would be many, in this retired spot, far away from the crowded drawing-room and town amusements, and that a turn might be given to their dispositions which would prove of essential service in future life.

He kissed his little girls, who fondly embraced him, and commissioned him with many messages to their mamma, whom he was to meet at Matlock, then got into the chaise, waved his hand, and drove off. The children followed

him to the gates, and watched the carriage as it descended the hill, till the shrubbery intervened, and it could be seen no longer.

A MORNING RAMBLE.

Several days passed away, and Caroline and Emily found, on each succeeding one, fresh beauties to admire about Grove Cottage.

One fine morning, a week or two after their father had left them, Anna and Ellen called them at an earlier hour than usual, in order to walk out and gather some fresh flowers, with which they intended to make a garland.

They were opening the little green gate that led into the fields, when Anna suddenly stopped, exclaiming, "The grass is quite wet with dew! Look at the little pearly drops that cover every blade. You know we promised mamma that we would not get our feet damp, and it is better to give up our pleasure than to break our promise."

"So it is," said her sister; "and I am quite willing to go without the roses and woodbines, for perhaps we shall be able to get them in the

evening. But let us walk down the lane towards the village, and try to find some flowers that will be new to Emmeline."

Having made this resolution, the two sisters, accompanied by their young friends, turned down the narrow lane. They probably felt rather reluctant to leave the honeysuckles, which they had quite depended on gathering; but they relinquished them with cheerfulness, happy in the reflection that they were complying with the wish of one who never desired them to do any thing but for their own good.

It was quite a summer's morning; the sky was blue and cloudless; the smoke curled slowly above the knotty elm-trees in the village; the blythe skylark carolled high in the air, and the little birds sang in the hedges.

"Hark!" said Caroline, "did you hear that sweet nightingale?"

"No, it was only a yellow-hammer; but the twittering of a yellow-hammer, when children are disposed to be gratified, is sweeter than the song of a nightingale when they are discontented, and not in a humour to enjoy themselves."

Our little party did not now at all regret

having left the fields, for they found they could gather as many flowers as they wished without treading upon the grass. For this was one of those unfrequented lanes where—

——Purple tassels of the tangling vetch
Hang elegant;

and a little brook ran bubbling along by its side, in which

The bright *nymphea* loved to lave,
Or spread her golden orbs upon the dimpling wave;

and farther on the bank was covered with fox-gloves—

————In whose drooping bells the bee
Made her sweet music.

Emily gathered as many flowers as she could hold in her hand in a very short time; first stopping to cull one, because it was so sweet; and then another, because it was so beautiful. While thus busily engaged, Emmeline overtook them; she gave her little basket to Ellen, and they walked on together.

"Look at my flowers, dear Emmeline, said Caroline, "are they not pretty? We shall take them home, and make a crown of roses for Anna to wear on her birthday, as well as a garland to

hang up in the arbour; and we shall ask Mrs. F. to go and look at it."

"But your pleasure will soon be over," said Emmeline, smiling; "for the flowers will fade in the course of a day or two. You walk out and gather as many as you can possibly carry, and then take them home and scatter them about, without paying any more regard to their beauty. It was but yesterday, when you returned from your walk, that I happened to enter the school-room, and found the desks, chairs, and tables strewed with withered roses and faded wood-bines. I then went to the nursery, and found it in the same state; and when I asked Ann why there was such a litter, she replied,

"Miss Somerset left them here, and desired they might not be thrown away; and Miss Emily put them there, and said they were for a gar-land."

"Now, although I like to see you fond of flowers, and am willing for you to gather as many as you please, I cannot help wishing that they might answer some farther purpose than merely to be taken home to give the servants trouble."

"Ah!" exclaimed Caroline, "I know what you mean. You think we ought to understand botany as you do. But botany appears to me to be such a very dry, unentertaining study, full of such hard names and difficult words, that, much as I love plants and flowers, I do not think I should ever like it; besides, I do not know of what *use* all those long words are, such as *Monandria* and *Diandria*, which I have sometimes seen in your *Withering*, when it has been lying on the study-table, and a great many more, equally difficult either to remember or know the meaning of.—I do not like your Withering at all, Emmeline!"

"Stop, stop, my dear! you must not dislike poor Withering without reason, for he is a great favourite of mine, and his botanical arrangement of British plants is too valuable to be despised. Botany is not quite so difficult as you seem to imagine, and by understanding it, we become acquainted with the uses of various plants, and the peculiar purposes for which they are designed. All plants are of service in one way or other: some are used as medicine, others as food; and as their nature and properties are

very different, it is quite right to become acquainted with those properties, otherwise we might misapply them, and render those injurious in their effects, which might have been beneficial. There are some long names certainly, but those who are afraid to contend with little difficulties, will never be fit for undertakings of more importance; besides, practice and experience, which render the most difficult things easy, would soon enable you to understand and retain them."

"But," said Caroline, blushing, "you draw from nature—you copy all the flowers you find; we cannot draw except from patterns."

"But Laura and Anna draw from nature; and you shall learn to draw from nature also, if you please."

"That will be delightful indeed!" exclaimed both the children at once. "Botany will be very amusing, if you will teach us how to copy every fresh flower we find. And may we have a book like Laura and Anna?"

"Yes; you shall each have a book, and write the botanical description under every plant," said Emmeline, "which will be of use in

enabling you to remember their names; and I believe you will, in a short time, acknowledge that Botany adds double interest to all your walks and rambles."

They were at this moment sauntering by a cottage garden, in which a labourer was at work digging potatoes; Emmeline spoke to him as they passed, and begged him to give her one of the beautiful tulips which were growing in the next little border. He laid down his spade instantly, and gathered the finest among them. "You are heartily welcome, Madam," said he, when Emmeline thanked him, with that cordial courtesy with which she always addressed her inferiors.

"Now, Caroline, my love," said she, "I believe I can give you a little botanical lesson without troubling your memory with any hard names, and without even the assistance of Withering. I chose this tulip in preference to a wild flower, because I imagined it would be less difficult to begin with. Can you describe it?"

"Oh yes, very easily," said Caroline. 'Every body must know that it consists of a root, and

some leaves, and a stalk, at the top of which grows a beautiful tulip."

"Very well," said Emmeline, "so far, so good. Each part of the plant is of material consequence to the rest. Let us begin with the root:—of what use is the root?"

"It supports and fixes the plant in the ground," replied Caroline; "for without it the stalk would be unable to stand upright, and to bear the weight of the blossom."

"That is one use, certainly; but even supposing the plant could stand upright without its root, it would be unable to live without it, because it is the part from which it receives its chief nourishment. I dare say you have sometimes observed that the roots of different plants are of different forms."

"Yes," said Emily: "potatoes, for instance, are very different from hyacinths. We had hyacinths at home in the Spring, and I perfectly remember noticing the roots when they stood in glasses in the parlour window; they were of a round form, and had long thin stalks, that struck down into the water."

"You must not call them stalks, my dear, but fibres," said Emmeline; "they were of unspeakable service to the hyacinths, for, like so many mouths, they absorbed the water, and conveyed it to the plant: thus it is with the root of the tulip; its numerous fibres imbibe moisture from the earth, and yield it support and nourishment. This is one great use of the root; now for the stalk or stem. The stalk is furnished with innumerable vessels, which convey the fluids to and from every part of the plant: so it not only answers the purpose of supporting the blossom, but likewise that of furnishing it with nourishment."

"And the leaves, dear Emmeline, are they of any farther use than ornament?"

"Yes: they answer the purpose of lungs, by imbibing and giving out moisture."

And now we will talk of the flower, which requires a more particular explanation. Beautiful as it is to the eye of a superficial observer, it is yet more so to one who examines it attentively, and becomes acquainted with its curious structure. These outer leaves, which are so brilliantly striped with brown and yellow, are

called the corolla; the coloured part of a flower is always called the corolla. You see this is divided into six parts; each distinct part is called a petal. Now look into the blossom, and tell me what is there."

"Ha! ha! I never looked into a tulip before. I see six little columns, each crowned with a black tuft, and a taller column rising in the middle."

"The six little columns, as you call them, are named *stamens;* and the little black tufts are the *anthers,* containing the pollen or farina, with which bees make their wax. The middle column is called the *pointal,* and the small particles of black dust which burst from the anthers are absorbed by it, and, passing through the style, reach the germ, which is the lowest part of the pointal, where they become vivified, and produce seed for future plants. I dare say this is quite new to you. You never thought before of the *manner* in which plants are produced. I trust, however, you will soon find that your pleasure in viewing the beauties of creation is materially increased in proportion as you understand the source from whence effects so won-

derful and so curious proceed. When the seeds are ripe we gather them, and sow them in the ground the ensuing spring, when they soon peep above the garden mould, and produce other flowers."

"Indeed!" said Emily; "I had never before any idea that the black dust we see on the stamens of the tulip, or the scarlet farina on those of the lily, could be of such important use. Botany will be extremely amusing, if it is all like this, and especially if we can copy our plants: will it not?"

"Yes, I hope you will find it so, my dear," replied Miss F.; "and I have no doubt but you will shortly discover that even a daisy or a primrose possesses beauties unseen by the common eye, and that the more we study the works of God, the more wisdom, loveliness, and harmony, we shall discover in all of them, and that while we admire, it is impossible not to adore. This is one reason why I would wish every young person to study botany."

The conversation was here interrupted by a turn in the road, which brought them to a little

wicket gate that led to a white-washed cottage, whose chimney was covered with a mantle of venerable ivy. Emmeline entered the house in order to dispose of the contents of her basket, while the children ran farther down in the lane, to seek for suitable plants to copy when they got home, for, with all the ardour incident to childhood, they now fancied that botany would be the most delightful amusement; and before they reached Grove Cottage, Caroline and Emily had actually learned that those flowers whose corolla is in the form of a cross are called cruciform, as the cabbage and radish; that those plants whose blossoms are supported by little stalks springing from one large or central one, like the spokes of an umbrella, are called umbelliferous, as parsley and carrot; and that those flowers which contain many little florets in one common calyx or cup, as the daisy, are called compound flowered plants, &c. &c. They had also selected a specimen of money-wort, with its trailing yellow blossoms, and an ivy-leaved campanula; and after breakfast they seated themselves in the cheerful library, with

their palettes and paint-boxes before them, and began to make the first attempt to copy from nature.

ANNA'S BIRTHDAY.

At length the important day approached to which we referred in the preceding chapter. The tenth birthday of the little Anna was just at hand; and although Caroline and Emily were busily employed with the money-wort and the ivy-leaved campanula, they found time to assist the other children in forming a crown of roses, to dignify their sister on this eventful day. But as the petals of the wild roses fell off soon after they were put in water, and the other flowers were destroyed by having been pulled to pieces in order to be examined, they were allowed to gather as many roses as they pleased out of the garden; the crown was, therefore, of the sweetest flowers; and, as Emily, who was very fond of Anna, playfully said, "it well befitted the sweetest of girls;" for it consisted of fine damask roses and sweet-scented clematis, woven together with much taste and elegance.

But the pleasure of wearing this garland was reserved till towards evening; and when it was pronounced to be exactly of the right size, and to fit Anna as exactly as the crown of cowslips and marigolds had fitted the village girl who was chosen Queen of May, Emmeline was called upon to fix it up, by means of a pulley, in a shady arbour, where a cage containing a pair of doves was usually stationed—this had been removed upon the occasion, and just as the flowers were adjusted, and the garland was being drawn up, Anna, who had escaped from the rest, came running down the broad nut-tree walk with Galignani's Grammar in her hand: "*Noi sarémo—voi saréte—églino saránno*"—exclaimed she—"Oh, this difficult verb! I do not like future tenses at all, dear Emmeline, and I am sadly afraid that I shall not have said this before the strawberry girls come."

"But it will be quite time enough to learn your lessons for to-morrow in the evening," said Caroline, who had not heard the latter part of the sentence.

"But this is my Italian day," rejoined Anna. "It is my turn to learn Italian, and this diffi-

cult verb takes such a long time! I wish I could remember the *noi sarémo*, and *voi suréte*, and *églino saránno;* and then I should do. However, I will go and sit down upon the grass at the other end of the walk, and think no more about the garland."

"Lessons upon your birthday! do you really, actually learn lessons to-day?" exclaimed both the Somersets, in a tone of unaffected surprise.

"Oh yes, certainly; we never think of missing them," rejoined Anna, running away.

But Caroline and Emily were not so easily satisfied.

"How very curious!" said they. "Indeed, Miss F., though we have not been used to do much at home at any time, yet upon our birthdays we were always allowed to enjoy ourselves as much as we pleased. Mamma always allowed us to do just what we liked; and many young ladies of our acquaintance, in town, never learn any lessons upon their birthdays. There are the Miss B.'s and the Miss M.'s, and Augusta C. and her sister: Oh! how they would laugh at the idea of saying lessons upon their birthdays."

"Now, Caroline," said Emmeline, smiling,

"give me some good reason, tell me only *why* people should be *idle* at those particular periods?"

Caroline was somewhat confused at receiving a question she knew not how to answer.

"Oh! I cannot tell *why*, but one always fancies that day to be a day of enjoyment; and of course it cannot be so if one has long troublesome lessons to get by heart."

"I hope you will remember to ask Anna, in the evening, if her birthday has not been spent more happily, even with her Italian lesson that she just now called difficult, than if it had been spent in idleness. A whole holiday generally produces fatigue, languor, and *ennui*, before the day is over; and this little exercise in the morning will give your young friends an additional relish for the amusements we propose in the afternoon."

Caroline still felt as though she should not be inclined to conjugate an Italian verb upon her birthday.

"I know some little girls," said Emmeline, "who seem to imagine, that upon their birthdays they may be idle or ill-humoured, or inat-

tentive or troublesome, or behave just as they please; but, as we wish for none of these dispositions to be witnessed at Grove Cottage, we attend to our lessons as usual; perhaps, if possible, with more than customary ardour; the thought that a year has rapidly flown since the last anniversary of our birth, ought to give additional animation to our pursuits, and fill us with a stronger desire of advancing in all that is good."

Emmeline now left the arbour; her sisters accompanied her: but Caroline and Emily sauntered towards the greenhouse to look at some little verbenums they were rearing; and it was after twelve o'clock when they reached the house, and entered the room appropriated to the use of the children. There they were;—Laura at the piano; Ellen, with the globe standing before her, busy in passing the quadrant of altitude over Quebec, in order to find its distance from London; Anna, with her slate and Italian grammar, employed in translating the exercises that accompany the verb *essére;* and little Augusta and Lucy, each with a spelling-book in their hands. The two sisters seated themselves

upon the sofa to contemplate the happy countenances of their young companions (for although they were accustomed to say lessons with the F.'s, they were, by particular desire, this day exempted from the task)—no ill-humour, no discontent prevailed; each little girl was intent upon what she was about, and appeared to have forgotten the birthday. At length the clock struck one; the long tiresome lesson was accomplished; the problem worked, and the piano closed. Full of youthful glee, the children left the school-room to enjoy their amusements with a greater relish than if they had been sauntering about, and idling away their time during the whole morning.

"Now, come to mamma's dressing-room," said Anna, catching Caroline by her arm, "and you shall see what pleasures are in store for us."

The other children followed them; and when they reached the dressing-room, a pleasing sight indeed presented itself.

"We have been making these baby-clothes ourselves," said Anna; "Emmeline has assisted us, of course. Look, there are ten different lots; and in the afternoon we are going to take

them to those poor people in the village, for whom they are intended. Is not this a pretty little bedgown of blue striped gingham? This, and those two little caps and shirts, are for Sally Moss's baby; and that nice comfortable petticoat and little frock are for the poor woman who lives in that small white-washed cottage, where Emmeline went the other morning when we were with her. You cannot think how we enjoy this day. All the poor people know about it, and enjoy it almost as much as we do. You must go with us, and I am sure you will smile when you see the little bunches of flowers they give us; they generally get the best that are to be found in their gardens; a great cabbage rose and a few pinks, and a sprig of southernwood: we have much better at home, certainly; but then we like them, because Emmeline says they evince their gratitude."

Dinner was ordered at an earlier hour than usual, that the young people might have time to accomplish all they wished in the afternoon; and almost before the dessert was removed, they had left the room, and were preparing their little loads for the purposes for which they were de-

signed. They themselves were soon equipped in their hats and spencers, and with happy countenances, expressive of benevolent pleasure, they rambled arm in arm, down the pretty rural lane we have already described, towards the village. The white-washed cottage first presented itself; and here the novelty of the scene delighted Caroline and her sister. Before they came into the north they had never been within a cottage; and the neatness of this—the stone floor—the furniture rubbed bright as a looking-glass—the long row of pewter plates—the clean casement windows, through the bars of which the full-blown roses peeped, and wafted their balmy fragrance, pleased them exceedingly; and when the children had disposed of the little offerings intended for nurse Greville, they proceeded to the pretty cottage where Sally Moss lived. It was near a farm-yard, and built in a rural style; the thatch was half-covered with a mantle of ivy—and a fine chestnut, with its white pyramids of blossoms, overshadowed it; they walked up the little gravel path to the door, lifted the wooden latch, and entered it *sans cérémonie*. A lovely infant was sleeping in the cradle; and a boy of

two years old lay half slumbering on its mother's knee.

"We have brought a bedgown for your little girl, Sally," said Anna, taking the bundle from the basket that Laura and herself carried between them.

As Sally rose, she saw Caroline and Emily, who immediately recognized her as the good-natured woman who had given them the draught of new milk on the evening of their arrival at Grove Cottage. They spoke to her with pleasure; admired her chubby-cheeked boy, and tied a new cap upon the head of the little baby; and after having partaken of some new whey, and admired the neat little garden, the cows in the farm-yard, and the fine young bantams that were pecking up the barley strewed for them in the little court, they left the cottage, attended by the blessings and good wishes of the grateful woman. How trivial an act of kindness will impart greater delight to a poor person than any gift that wealth could purchase! Even a kind look will sometimes excite their gratitude, and cause smiles of joy, amidst the clouds of affliction. The F.'s knew this, and their benevolent hearts

expanded at the very thought of making others happy. Caroline and her sister enjoyed similar sensations; felt the pleasure that arises from doing good, and made many resolutions, that when settled at Aston Hall, their birthdays should be spent exactly in the same manner.

It would take us too long to give an account of the cottages that our youthful party visited on this afternoon, or to describe the grateful joy that prevailed among the receivers of their bounty. Suffice it to say, that having disposed of their little burdens, they returned home, and repaired to the shady arbour at the bottom of the nut-tree walk. The crown of roses was lowered and placed on Anna's head, and presently the sound of voices, rising in chorus and in songs of joy, was heard; a moment after a train of charity girls were seen, robed in their Sunday frocks of blue checked gingham, and bearing little baskets upon their arms. These contained wild strawberries, which they had been gathering in the wood, and now brought as an offering to Anna. They were accepted with many thanks, and the children were then conducted to a long table that was set out upon the

lawn, where they partook of a nice supper that had been prepared for them, while the little F.'s and their companions sat near them, under the shade of two oaks that formed a green canopy overhead, and ate their strawberries and cream. When supper was ended, Anna presented each of the charity girls with a little book, which had been selected by Emmeline for the occasion: to one she gave the Dairyman's Daughter; to another the Young Cottager, &c. All were gratified, all were pleased; and each returned to her humble home, delighted with the evening she had spent on the lawn at Grove Cottage.

Evening indeed was come; bed-time was now just at hand; but Emmeline did not forget to ask her sister Anna, when the Somersets were by, if she had not spent a happy birthday notwithstanding the long Italian verb that had been conjugated in the morning?

THE ARTIFICIAL SPAR.

"I HAVE just been into the Conservatory, Emmeline, and the gardener tells me that the

name of the curious flower I was looking at before breakfast is the air-plant," exclaimed Caroline, running to the open window of the parlour. "I quite forget its botanical name—the —the—however, never mind that, it is called the air-plant, because it lives on air; that is, it requires no nourishment from earth or water; indeed, I believe it has no root, no fibres to absorb the water if it did want it; so now I know for what reason it was tied up to that little hook by a bit of yellow silk. What a variety of plants there are in your conservatory! I have been looking particularly at the cinnamon, with its fragrant leaves; and the nutmeg, and the sassafras, and the coffee tree, with its white blossoms and scarlet berries: and the tea tree, which the gardener says is a native of China, the country from whence tea is brought; it has pretty blossoms like wild roses—and little leaves, which Francis tells me the Chinese gather very carefully, and then roll them up over hot plates, and fan them with large fans to dry them, and then they are packed in great chests and sent over to England; and the very next time you make tea, I mean to look in the tea-pot, in

order to see whether they expand and unroll themselves as he says they do. But now will you tell me the right name of the little air-plant?"

"It is the *Tillandsia xiphioides*," replied Emmeline, "a native of Buenos Ayres."

"Wait a moment—oh, I recollect, Buenos Ayres is the capital of Chili, in South America. I have heard papa say, that Brazil produces many beautiful flowers, and I suppose Chili does also. Well, what else?"

"It possesses the English name of *air-plant*, because it has, as Francis told you, the singular property of vegetating for years when suspended by a single thread. We have, for instance, had our *Tillandsia* more than three years in the conservatory; it was brought over by Captain G. when he returned from America."

"The *Tillandsia*—the *Tillandsia xiphioides*," said Caroline: "I will try to remember that hard name, for the sake of the curious plant;" and she was again repeating the word *Tillandsia*, when her attention was attracted from both the air-plant and the conservatory, by seeing Laura employed in twisting some wire into the shape of a basket.

"Laura! my dear Laura! what are you making?" exclaimed she, running up the steps, round through the hall into the breakfast room. "A little basket!"

"Pray what are you making a wire basket for; you know very well that it cannot hold any thing, for whatever you put in would fall through these openings; besides, I do not see any thing particularly pretty in a wire basket."

Laura smiled; and as Caroline spoke, some of the other children entered the room, and evinced by their blooming countenances that they had been for a walk.

"Oh, Caroline, you are here," said Ellen: "we looked for you in every place we could think of before we went out, but we could not find you. I wish you had gone with us, for we have had such a pleasant walk down to the village! We have been having some syllabub under the cow at Farmer Rand's; and he was so polite as to send his man Ralph to the blacksmith's, to procure these clinkers for us. Look, Laura!"

While the children had been walking, Caroline had been examining the plants in the conservatory; she was therefore at a loss to imagine

what Ellen meant to do with the black, dirty-looking things in her basket, and she turned to Emmeline for an explanation.

"We are going to make an experiment," said she. "The children have sometimes seen what is called *artificial spar*, and they are anxious to produce some specimens. Laura is going to make a spar basket; and these *clinkers*, as the blacksmiths call them, are for pieces of spar; they are only coals which have been burnt until they are become cinders, perfectly calcined and hard."

"How curious!" exclaimed Caroline, in surprise. "But how do you make it? what do you make it of? pray tell me, that I may tell my mamma when I go home."

"You shall know in time, my little friend," said Emmeline; and ringing the bell, she desired the servant to take a large saucepan and some alum that was lying in a paper in the china closet, into the laundry, and also to wash the clinkers that were in Ellen's basket.

"Now," said she, turning to the children, "if you like to follow me, you shall see how we give these black, dirty-looking coals the appearance of beautiful transparent spar." Laura's basket

was just completed, and the young party needed not a second summons, but followed Miss F. into the laundry, expecting to see some wonderful exploit. She boiled the alum in the saucepan, and when it was perfectly dissolved, poured part of it carefully into a large basin in which the clinkers were laid, and the rest into a jar in which the little wire basket was suspended.

"Now," said she, "you may go and amuse yourselves, my dears. Caroline, your ivy-leaved campanula is not completed, I believe, and we have a new book to read this evening. I have only to request that you will none of you come into the laundry till twelve o'clock to-morrow morning, and then you shall see them again."

"Is this all?—is this all that is to be done?" exclaimed several of the children, in a tone of disappointment. "May we not come with you when you come to make the spar?"

"You shall accompany me if you please, next time I enter the laundry, but I do not intend to come again to-day."

The children, assured that Emmeline would keep her word, returned to the parlour and began drawing.

"I will copy the curious air-plant," said Caroline: "but stay, I forgot you have only one, I must not have that. Well, I will copy the sketch of the rustic bridge that is in your portfolio, if you will lend it me."

"And I," said Emily, "will be reader—what book shall we have?"

"I have an entertaining volume for you," replied Emmeline. "Here it is. 'Travels in Africa, by Mungo Park,' an enterprising traveller, who penetrated into the interior of that country, in hopes of discovering the source of the Niger, but met with a melancholy death by the natives."

The children seated themselves to their several employments, and read aloud by turns, while Miss F. gave explanations of any thing they did not understand respecting the country, &c.

The next day soon came, and at the appointed hour the young party, full of eager expectation, hastened to the laundry. Emmeline put her hand into the basin, and drew out one of the pieces of coal incrusted in large and beautiful crystals, and wearing every appearance of a piece of Derbyshire spar.

" How extremely beautiful!" exclaimed Caroline; " I had no idea that you could make any thing like this."—" How very beautiful!" said all the children, as Emmeline drew out each succeeding specimen. " Now for the basket!" Emmeline cut the twine by which Laura's little wire basket was suspended, and presently drew out of the water a beautiful white basket formed of crystals as transparent as crystal itself, and glittering like diamonds.

I am glad that I did not go to Farmer Rand's," exclaimed Laura. " I am glad that I stayed at home and deprived myself of that little pleasure, in order to have the much greater pleasure of possessing this basket. But how came these beautiful crystals? how was the spar, as you call it, produced? and how could the alum be formed into these regular shapes, when no one even touched it?"

Emmeline had made this little experiment on purpose to excite the curiosity of her sisters and their companions; and, after some ingenious inquiries on their part, she told them that the process the alum had undergone was called *crystallization*.

But none of them understood what was meant by this term, and they were again obliged to have recourse to their kind instructress.

"Ice," said she, "will give you a good idea of an entire crystallization, for it is nothing more than water congealed and formed into long needle-like masses by the action of cold. Most solid bodies, but chiefly saline minerals, are capable of being made to assume the form of crystals. All bodies consist of very minute particles, and as these particles must be at liberty to move before they can crystallize, it is obvious that we cannot reduce any bodies to the state of crystals except those which we are able to make fluid."

"I begin to understand you," said Laura. "We could not make coal or diamonds crystallize, because we could not first dissolve them in water, though we may alum, or salt, or saltpetre, or similar substances. But how is it that the little particles of which alum is composed *get together* again, after having been once separated and mixed with the water?"

"The principal part of the water is drawn off by evaporation," replied her sister: "but I must

explain that term. Heat, whether occasioned by the sun or fire, causes the particles of water to fly off or disperse into the air, and this is called evaporation. As the water in this basin evaporated, the particles of the alum I had dissolved gradually approached each other, combined together, and formed small crystals, which became continually larger by the addition of other particles; and by the time the remaining water was quite cold, the crystals of alum had formed, and attached themselves to the clinkers and the little wire basket. You have received a little lesson in chemistry by means of this experiment, which is so pretty a one, that I am glad we tried it."

"It is indeed," said Caroline; "and how one subject springs out of another! Your spar basket, Laura, has given me quite a new train of thought. I really think I should like to learn chemistry, when I am rather older, if it be all like this."

"But, Emmeline, you told us that most *saline* minerals were capable of crystallization: what do you mean by *saline?*"

"Of a salt or pungent taste, as alum, salt-

petre, nitre, and salt itself: all of which will form into crystals of different shapes, after having been dissolved in water."

"What are those minerals called that are not saline?" said Emily. "I have learnt already that minerals are substances dug out of the ground; substances that neither grow nor feel are minerals."

"All bodies belonging to the mineral kingdom are divided into four classes," replied Miss F., "in the same manner as all plants belonging to the vegetable kingdom are divided into twenty-four. Mineralogists thus class the productions of their favourites:—

"Earthy minerals, such as are without taste or smell, as diamonds, spar, clay, sapphires, and rubies.

"Saline minerals, such as are heavy, soft, and frequently semi-transparent, as alum, salt, &c.

"Inflammable minerals, such as are light and brittle, and never feel cold when we touch them, as coal and sulphur.

"Metallic minerals, such as are cold and heavy, capable of being heated and wrought

into different forms, or, in more scientific terms, malleable, that is, capable of extension under the stroke of a hammer; and ductile, that is, possessing the power of being drawn out into wire; as gold, silver, copper, iron, tin, &c.

"All different minerals are useful in different ways, and the study of them is called mineralogy.

"Thus may our curiosity be gratified by surveying the productions of nature; and the more knowledge we acquire, the farther we extend our researches, the more reason we shall find to admire the general harmony and beauty that exists throughout the whole creation.

"When you are a little older, I really believe, my dear Caroline, that you *will* find much pleasure in turning your attention to mineralogy and chemistry."

As Emmeline spoke, the bell for dressing-time was heard, and the children were dispersed in a moment.

THE DRAWER OF SHELLS.

"WHEN we were reading Park's Travels, last night," said Emily, "I observed, he men-

tioned that the inhabitants of Africa employ shells, called *cowries*, in the place of money."

"They do," said Miss F.; "about two thousand of them are reckoned equal in value to one rupee."

"What is the value of a rupee?" asked Anna.

"A rupee is an Indian coin, about equal in value to *2s. 3d.*," replied her sister. "I have heard that the negro women fish for the cowries usually three days before and after the full moon, and thirty or forty vessels are laden with them every year in the Maldive Islands for exportation to Africa, Bengal, Siam, and the adjacent islands, for the purpose of commerce."

"I should like to see a cowry," said Emily; "it appears to me a very strange custom, for shells to be used instead of money."

"If you will follow me, my dear," said Miss F., "I can gratify you, I believe, by a compliance with your wish."

As she spoke she rose, and went towards the library, whither the children followed her. "Here," said she, opening a drawer belonging to one of the book-cases, "here is a cowry."

Caroline took it in her hand and admired its high polish; while Laura, who had already gained a considerable store of information from her sister, remarked that in uncivilized countries several species of these shells are used as ornaments for the person, being formed into necklaces, broaches, &c. And that a curious fact was stated by M. Brugière, that when the animals that live in them find their shells too small for the increased dimension of their body, they leave them, and proceed to the formation of new ones of a larger size, and better suited to their wants."

"The *cypræa moneta*, or money-cowry, forms the current coin of many nations of India and Africa," said Emmeline; "and this covering of an inconsiderable worm stands at this day as the medium of barter for the liberty of a man—a certain weight of them being given in exchange for a slave.* I am glad to hear that great exertions are being made for the destruction of this horrid traffic; and may all who are engaged in the benevolent design, have their highest wishes

* Turton's Conchological Dictionary of the British Islands.

gratified by a complete abolition of the slave-trade throughout the world!"

Caroline, in the mean time, had been examining a large, white, transparent-looking shell, somewhat in the shape of a snail-shell, and laid upon half a sheet of writing paper, which it almost covered. It was of a delicate texture, and composed of two separate sides, united by a narrow strip or keel of the same texture, and when she held it up to the light, she perceived that it was divided into a number of partitions or separate cells, perhaps thirty or forty, which formed a spiral line; and there was a little hole in each cell through which a crow-quill might be passed."

"The ancients are said to have derived the art of navigation from the animals inhabiting these shells," said Emmeline, turning towards her; "indeed the name *nautilus* is derived from a Greek word, which means both a fish and a sailor. These little animals are seen, in calm weather, floating on the surface of the water frequently in the Mediterranean, with some of their tentacula extended at the sides, while two arms are thrown on high, supporting a thin mem-

brane between them, which answers the purpose of a sail. These little creatures raise themselves to the surface of the sea, by ejecting the water from their shells, and on the approach of danger they draw in their arms, and with them a quantity of water, which causes them to sink immediately. When the sea is calm, and the waves are gently swelling with every whispering breeze, numbers of these animals may be seen sailing about in their elegant boats, and enjoying the clear sunshine. But as they possess the power of sinking whenever they please, they are seldom taken perfect, as they disappear the moment they are disturbed, and are only accidentally brought up in the nets of fishermen, or found left on dry rocks, and frequently very much injured, as their shells are of such a brittle texture."

"May I repeat the lines I learned the other day," said Ellen: "I think Caroline will like them, and understand them too, which makes them much prettier."

"You may, my love."

"Two feet they upward raise, and steady keep;
These are the masts and rigging of the ship:

A membrane stretch'd between supplies the sail,
Bends from the masts, and swells before the gale.
The other feet hang paddling on each side,
And serve for oars to row, and helm to guide.
'Tis thus they sail, pleas'd with the wanton game,
The fish, the sailor, and the ship the same.
But, when the swimmers dread some danger near,
The sportive pleasure yields to stronger fear;
No more they wanton drive before the blasts,
But strike the sails, and bring down all the masts.
The rolling waves their sinking shells o'erflow,
And dash them down again to sands below."

"They are very pretty lines," said Caroline; "and I have now as good an idea of the clever nautilus as if I had actually seen him in his little light boat rowing away! I am quite delighted with this drawer of shells," continued she, turning to Miss F. "Do you know I never saw any shells before, but a few that papa brought from Brighton last summer, which are placed on the dining-room mantel-shelf at our house in London; and those in the British Museum, which I once saw, when I went there with mamma, and some ladies of her acquaintance; but then I could not touch them and examine them as I wished, they being all locked up in glass cases.

Pray what is the study of shells called?—You know, I fancied I should not like botany at first, because there were such hard names; and now I am so fond of it! I will not form any foolish prejudices this time, and imagine I shall not like the study of shells if there are any difficult words to remember."

Emmeline smiled, and exclaimed,

"Each moss,
Each *shell*, each crawling insect, holds a rank
Important in the plan of Him who framed
This scale of beings."

"Ah! I know what you mean," rejoined Caroline, catching the allusion; "you think it right to be fond of flowers, or shells, or any thing else that can lead us to admire the hand that formed them. Do you know I have not only learned many things since I came to Grove Cottage; but even my very thoughts are different from what they once were. I never used to think *who* gave the grass its beauty, *who* caused the flowers to blossom, or *who* gave life to the little insects that were fluttering amongst them; but you have taught me to consider, that they are all formed by the finger of God,

and that even common flies and pebbles are to be admired, as they exhibit His wisdom and goodness."

Emmeline was gratified by the remarks of her young friend, and delighted to perceive that, with all the gaiety and artlessness of childhood, her disposition was becoming habitually thoughtful, and inclined to reflection: for she had earnestly endeavoured to engraft the seeds of piety in her bosom, and she now directed the discourse to the objects before them.

"Shells form a link in the chain of nature," said she, "and may well be admired for their singular and beautiful forms, their brilliant colours, and their delicacy of texture. The study of shells is called *Conchology*, and it is a study particularly adapted to lead us to the contemplation of the glory of God in the creation. Shells are divided into three classes: Univalves, Bivalves, and Multivalves."

"Only three classes, how very easy! How are they distinguished?"

"The univalves consist of one piece only; the bivalves of two pieces or valves connected by a hinge, and the multivalves of more than two."

"Then the *nautilus* belongs to the first class," said Caroline, "as it consists of one piece only. Oh, here is a cowry; it is a univalve also, as it is but one piece: and here is another shell that consists but of one piece—the *patella* or limpet —I suppose that is its name."

"Limpets are found in great plenty on cliffy coasts, adhering to rocks and stones, to which they have the art of attaching themselves so very closely, that some strength is required to detach them with a knife."

"Here is the *teredo* or ship-worm," said Emily. "Why is it called the ship-worm?—it is a curious little thing—see, what a hole it has made in this piece of wood!"

"It obtains its name," said Miss F., "from the property of perforating itself into wood; such numbers are sometimes found in the sides and bottoms of ships, as even to endanger their sinking. By means of their hard and cutting jaws, they are able to penetrate into almost any timber; and stakes, which had not been in the water for more than four or five years, though of solid oak, have been found, on examination, to be perforated by them. I have heard that, some

years since, the inhabitants of the United Provinces were under great alarm on account of these worms, which had made dreadful depredations in the piles that support the banks of many parts of those coasts. One of the persons who had the care of the coasts at that time, observed with surprise that some of the timbers were, in the course only of a few months, made so full of holes, that they could be beaten to pieces with the least force."

"Troublesome little things! But can nothing be done to remedy such disasters?" said Caroline.

"The best method which has hitherto been discovered to preserve timber from the ravages of these worms, is that which is now adopted in the dock at Plymouth, to cover all the parts which are under water with short, broad-headed nails. These soon cover the whole surface with a strong coating of rust, which is found to be altogether impenetrable to the animals."

"I am glad they have discovered a method of getting rid of their disagreeable visitants at last," said Emily.

"Now I will look for a bivalve: and next

time I write to mamma, I will tell her that I am as fond of conchology as of botany. Here is a bivalve—it is a cockle, and consists of two parts, united by a hinge."

"Cockles are very common upon sandy shores," said Emmeline. "They are frequently found in little inlets or bays near the mouths of rivers, and in such situations are generally buried at the depth of two or three inches in the sand, the place of each being marked by a small round spot."

"Then how do the people manage to get them from under the water?" asked Ellen. "Those little spots are very curious, and seem as though intended for tomb-stones, to point out where they are buried."

"Women and children dig up this little shell-fish with a small spade," said her sister. "I think you will like to hear something about the little inhabitant of this shell," taking one in her hand; "it is the *solon* or razor-shell."

"But where is the little inhabitant?—I do not see it."

"Oh, it is gone long ago; on taking a shell, the fish is immediately removed, otherwise,

we should be unable to keep them in the cabinet."

"How do shell-fish move?" said Caroline. "You know they have no feet, and also that they cannot swim as other fish do. Have they the power of moving from one place to another?"

"Some have what is called the faculty of locomotion: that is, the power of moving at will from one place to another; others have not. Many of the bivalved shells have the property of moving backwards or forwards, by a curious little instrument that has some resemblance to a leg or foot, and is called the *tongue*. But these animals can, whenever they please, assume almost any kind of form their wants require. They cannot make a progressive motion on the surface, that is, they cannot move forward; but they dig a hole or cell in the sand, sometimes two feet in depth, in which they ascend or descend at pleasure."

"How convenient!" said Caroline, "and how curious! This razor-fish reminds me of the lion-ant, that the travelled ant had such an escape from in 'Evenings at Home.' You know

it made a little pit, and hid itself in the sand till its prey was just on the brink, and then it put out its huge pair of horns and dreadful claws, and threw a shower of sand upon its poor victim, and tried all it could to catch it. I remember wishing that I had been that lion-ant, when mamma first read that tale to me. But does the inhabitant of this long-shaped shell—*solen*, as you call it—take shell and all to the bottom of its hole?"

"Yes; the instrument or tongue by which its motions are performed, is placed near the centre of its body. When necessary, the animal can make the end of the tongue assume the form of a ball. The razor-fish, when lying on the surface of the sand, and about to sink into it, extends its tongue from the lower end of the shell, and makes the extremity of it take the form of a shovel, sharp on each side, and ending in a point. With this instrument the animal cuts a hole in the sand. After the hole is made, it puts its tongue a little further into the sand, makes it wear the appearance of a hook, and with this hook it obliges the shell to descend into the hole. In this manner the animal con-

tinues its operations, until the shell sinks and totally disappears."

"Ah! then it is down, certainly!" said Emily. "But to rise again is no such easy matter. How does it manage that?"

"When it wishes to regain the surface, it forms the end of its tongue again into a ball, and makes an effort to extend the whole tongue; but the ball prevents any further descent, and the very effort occasioned by attempting it, necessarily pushes the shell upward until it reaches the surface. The dexterity and quickness with which the little animal performs these various motions is both astonishing and wonderful."

"But now I must leave you, for a poor woman is waiting to ask me about a ticket of admission to the Infirmary."

"Do not go just yet," exclaimed Caroline, catching Emmeline's hand, and holding it fast within her own. "You must let me look at a multivalve before you leave me."

"Well, one multivalve," said her kind friend, "no more; Caroline has too generous a heart to wish to keep a poor person in suspense, in order to procure gratification for herself."

Caroline blushed. "Go, go directly," said she; "I will content myself with knowing that shells consisting of more than two pieces are multivalves, and defer the pleasure of looking at them till you are quite at liberty."

THE COMET.

"A COMET is now visible in the south-west, between nine and ten in the evening," said Mr. F. during breakfast-time one morning, as he laid down the paper, in order to drink his coffee, which had stood till it was nearly cold.

"A comet, papa! a comet!" exclaimed Laura, Ellen, and Anna, in a breath: "I hope it will not be a cloudy night, that we may look for it. Do you think we shall be able to see it?"

"That I cannot tell," replied their father. "It must depend upon the evening; if it be fine and favourable, perhaps you may discover it by means of the telescope from the observatory."

The Somersets looked at Emmeline, as though they scarcely comprehended what was meant by a comet.

"I believe you mean a star with a long fiery tail," said Caroline. "I have heard our nurse-

maid at home talk about one that was seen a year or two ago. Mamma often said she meant me to look at it; but you know, when we lived in Russel Square, we were in the drawing-room with company just at the time the stars were shining brightly; and, indeed, if we had looked out of the window, I do not think we should have discovered a comet when all the lamps were lit up, and the streets were so light. But will you tell me what a comet really is?"

"It is supposed to be what you imagine it, my dear," replied Emmeline, "a star with a long transparent tail, resembling a yellow flame, and it has no regular orbit of its own; that is, it does not move as the planets do, round and round the sun, but stretches into space thousands of millions of miles distant. At one time people were very much alarmed at the appearance of a comet, and fancied it foretold that some dreadful event was about to take place; but I think it is a proof of increasing wisdom, that they are not so superstitious as they formerly were, when—

> **The illustrious stranger passing terror shed**
> **On gazing nations, from his fiery train**
> **Of length enormous."**

"I shall be very glad to see this comet," said Emily, "and to tell mamma, when I write to her, that we have seen it. The study of flowers is called botany—that of shells, conchology—that of minerals, mineralogy—pray what is the study of the stars called?"

Emmeline was pleased with this question, as it gave her an opportunity of awakening the curiosity, and turning the attention of her young companions to objects most worthy of it.

"The science that treats of the heavenly bodies is called *astronomy*," said she, "and of all studies, of all sciences cultivated by mankind, it is undoubtedly the most sublime, the most interesting, and the most beautiful."

"Oh, do give us a little lesson in astronomy," exclaimed Emily, affectionately clasping her hand; "you know how much we liked your little botanical lesson, and how fond we are become of botany; you know how much we enjoyed your little lesson in conchology. Do tell us something about the stars. Is it possible that we can ever know as much as you do about them?"

"Very possible, my love," said her kind instructress. "The knowledge of man must ne-

cessarily be limited as it relates to objects so far above his reach, and almost above his comprehension; but, nevertheless, what we do know is interesting and wonderful."

"You observed just now, that comets do not move as the planets do, regularly round and round the sun: what do you mean by the planets?"

"Our sun is attended by distinct globes, which revolve round; that is, move round and round his body at various distances," said Emmeline; "thus creating the different seasons, and at the same time turning round on their own axes, which occasions day and night. These globes, that have the sun for their centre, are called *planets;* our earth is one of them; and the whole, I mean sun and planets together, is called the solar system. Our solar system consists of seven globes, named as they succeed each other: Mercury, Venus, Earth, Mars, Jupiter, Saturn, and Herschel. All these planets are opaque bodies, and derive their light and heat from the sun."

"Stay one moment," said Caroline: "will you please to explain what is meant by *opaque?*"

"Solid, not transparent, without light of their own," said Miss F. "All the planets derive their light from the sun, as I have just told you. We live in one of the planets; and you know very well, that if the sun never shone upon us, we should have neither light, heat, nor life."

"What are all the other stars that may be seen on a fine clear evening?" enquired Emily.

"They are other solar systems," replied Emmeline. "There are evidently two kinds of stars; the one very brilliant and twinkling, the others shine with a steady light. The former, or fixed stars, as they are called, shine, no doubt, like the sun, with their own light; and the others are opaque bodies, similar to the earth which we inhabit, and shine by a borrowed light; that is, by the light which they have from the sun, as we do from the light we have from our sun."

"Is it not astonishing to think that our earth, which is no less than twenty-four thousand miles in circumference, appears only as a little twinkling star to the inhabitants of other systems!" exclaimed Laura, the "intelligent Laura," as Caroline called her.

"This is something quite new and delightful," said Emily; "but you, Miss F., have the art of making every thing delightful; and I believe when we are settled down at Aston Hall, we shall often wish we were at Grove Cottage. I hope Miss De Horne, the governess whom mamma has engaged for us, will be as clever as you are."

Emmeline smiled. Caroline, who had appeared in deep thought the few last moments, now exclaimed—

"What is the moon, dear Emmeline? I think I understand pretty clearly what you have already told us—but the moon can be neither a star nor a planet."

"I am glad you exert your capabilities, my dear young friend," said Miss F. "Several of the planets are themselves surrounded by smaller globes, which reflect the light of the sun by night. In this manner the earth is provided with the moon, which serves to reflect its light when the sun is set, and is bestowed upon us by an All-wise Creator, to guide the shipwrecked mariner, when cast upon a desert rock, in the midst of the ocean; to direct the weary and be-

nighted traveller, and to enlighten our long winter evenings; by his command

> ‘ The moon, as daylight fades,
> Lifts her broad circle in the deepening shades;
> Array'd in glory, and enthron'd in light,
> And breaks the solemn terrors of the night;
> Sweetly inconstant in her varying flame,
> She changes still—another, yet the same !’

“ Jupiter has four such moons; Saturn has seven, and Herschel has six. By looking through a telescope, we may easily discover those of Jupiter, which appear at this distance like four little stars.”

George, the footman, now came to fetch the urn; the tea-things were taken away, and the children summoned to attend their dancing-master: but they did not leave the breakfast parlour without expressing pleasure at the idea of looking at the comet in the evening. Evening came; but not so favourable an evening for the comet as could have been wished. By nine o'clock, the children had posted themselves at the windows of the observatory—the large telescope was placed in the proper direction, and every little eye was turned with eager avidity

towards the point in which it was expected to make its appearance. But, unfortunately, the atmosphere was somewhat misty, and a few silvery clouds floating about, obscured the very constellation in which the paper had said the comet might be seen.

"I have discovered it!" exclaimed Ellen, after gazing upon the starry firmament for a few moments; but Ellen was mistaken—her comet proved to be the planet Mars.

"Ah, now I actually see it!" cried Caroline, —"a star with a long flaming tail—there, there it is, in that direction."

But Caroline was equally wrong in her conjecture: for her comet proved to be only the star called Dubhe, the upper pointer in the constellation of the Great Bear. Increasing clouds foretold the children that no comet would be visible that night: and, in order to compensate for their disappointment, Emmeline turned their attention to other parts of the heavens; described to them how the ancients had divided all the stars into different constellations, so as to distinguish and know them apart; and that in the zodiac, or part of the heavens where the

sun appears to move, there were twelve of these constellations, commonly called the twelve signs of the zodiac; that the space between the zodiac and the north pole contained thirty-five constellations, while the regions south of the zodiac contained forty-seven constellations.

"One of the most beautiful of these clusters, or assemblages of stars," said she, "is Orion, distinguished by his belt of three brilliant stars in a row. You must remember to ask Miss De Horne to point out the constellation of Orion to you, when you take an evening walk next winter, for on a winter's evening it is particularly conspicuous and beautiful. Indeed they all possess beauty, and cannot fail to fill the reflective mind with feelings of admiration and awe:

"**There's nothing bright above, below,**
From flowers that bloom, to *stars* that glow,
But in its light my soul can see
Some feature of the Deity."

"How pretty those lines are!" said Caroline, and she was repeating—

"**There's nothing bright above, below,**
From flowers that bloom, to stars that glow,"—

when she was interrupted by Emily, who had

been looking at a book which Miss F. held in her hand.

"Ferguson's Astronomy," said she: "is that the same Ferguson of whom there is such a pretty account in one of our little books—in 'Buds of Genius,' I believe?"

"It is," said Emmeline; "he was a very clever man, and a great astronomer; though destitute of much education, he was extremely persevering in all he undertook. His genius was directed to useful objects, and notwithstanding the disadvantages under which he laboured, he became a celebrated and learned man. I have often told you, that perseverance—a determined resolution to accomplish any thing we have undertaken, will enable us to conquer every difficulty to which, in pursuit of a favourite object, we may be exposed—this quality, combined with the habit of observation, which is of essential use in every department of life, rendered Ferguson what he was, though he never had above three months' education.

"I never saw the little book of which you were speaking, Emily," said Laura: "What does it say about Ferguson? I should like to hear,

because my sister is so fond of his astronomical works."

"He was a Scotchman," replied Emily; "his father and mother were very poor, and lived at a small village in the north of Scotland. James Ferguson was a clever little fellow, and began to write books when he was only eight years old. I believe he was a shepherd-boy; he used to study the stars in the night, and in the day-time he amused himself by making models of mills, spinning-wheels, and such like things. When his day's work was done, he used to go in the fields, with a blanket wrapped round him, and lie down on the ground on his back, and measure the distances of the stars by means of a thread with little beads upon it, and in this manner he managed to find out their different positions. After this he contrived to make a globe, although it was the first he ever saw: and then, for he never liked to be idle, he constructed a wooden clock, which kept time pretty well. I am sure he must have been very clever, for the bell on which the hammer struck the hours was only the neck of a broken bottle. One day he met a gentleman riding by the

house, and he asked him to show him the inside of his watch; so when he had seen it, he made a watch himself with wooden wheels, and a whalebone spring.—Oh, how Edward laughed when he read the account of Ferguson's watch, for it was a very clumsy one, being contained in a wooden case, about as large as a breakfast tea-cup. But, poor fellow! somebody happened to let it fall, and then accidentally trod upon it, and crushed it to pieces; so he never made another, but turned his attention to the stars, I suppose, and wrote the book that Emmeline has in her hand."

"I think you have repeated the account given of Ferguson in 'Buds of Genius' very correctly, my dear," said Miss F. "He was indeed a promising 'bud,' and became in years of maturity a 'full-blown flower,' whose memory fadeth not away."

"I am confident that such a turn may be given to the early pursuits of children as will materially influence their dispositions and conduct in future life; and one important method to be pursued is, to imbue their minds in earliest infancy with the habit of observation, the habit

of making remarks, of paying attention to those *little circumstances*, to those simple causes and effects, which are too apt to pass unnoticed and unrecorded. Sir Isaac Newton, the greatest philosopher England has ever known, and whose illustrious name will to latest ages adorn the roll of history, made some of his greatest discoveries in consequence of a train of thought first suggested by seeing an apple fall from a tree, as he was sitting in an orchard one fine summer morning: a fact which had been witnessed for thousands of years, and might have been for ever observed by ordinary minds, without leading to any important result. But with Newton it was far otherwise: when he had once asked himself the question, "*Why* does it fall?" his thoughts were directed by a chain of reasoning, as simple as it was accurate, until he had laid the mighty scene of nature open to our view, and unveiled the law of *attraction*, by which not only atoms, but worlds are combined into one harmonious whole.

But I must leave this subject till you are a little more versed in astronomy.

Galileo, a native of Italy, to whom we are

indebted as the inventor of the telescope, an instrument which enables the human mind to penetrate into very remote regions of space, and far beyond the limits which nature has assigned, had his attention first awakened to the subject by hearing that some children of a Dutch spectacle-maker, being at play with some spectacle glasses, made use of two of them together, the one convex and the other concave, in looking at the weather-cock of a church, and observed that it appeared much nearer and larger than usual. When the celebrated Galileo heard of the circumstance, he conceived the idea of applying it to astronomical purposes, and was thus led to the actual invention of the telescope: for, with that ingenuity for which he was so remarkable, he constructed one by fitting some large glasses to the pipes of an organ. His telescope magnified more than thirty times, and all the advances made in astronomy after this period were the easy and natural consequences of his invention. He himself discovered the four satellites or moons of Jupiter, and also that the sun is the centre of our solar system, as well as many more interesting facts before unknown. Thus,

you see, my dear young friends, that when we reflect upon the *means* by which discoveries have been effected, we cannot fail to be forcibly struck with the circumstance, that the most important consequences have often been the result of the most *trivial* accidents.

"But it is past your usual bed-time: I must wish you good-night."

The children took leave of Emmeline with fond affection.

"Although we have not seen the comet," said Caroline to Laura, "we have learned *something useful.*"

THE FLOWERING RUSH.

SUMMER is in its prime; the parrot flocks
Darken the passing sunshine on the rocks;
The chrysomel and purple butterfly,
Amid the clear blue light are wandering by;
The humming bird, along the myrtle bowers,
With twinkling wing, is spinning o'er the flowers;
And all the farther woods and thickets ring,
So loud the cureu and the thenca sing.

Checkering with partial shade the beams of noon,
And arching the grey rock with wild festoon;

Here its gay net-work and fantastic twine,
The purple cogul threads from pine to pine:
And oft, as the fresh airs of morning breathe,
Dips its long tendrils in the stream beneath.
There, through the trunks with moss and lichens white,
The sunshine darts its interrupted light:
And 'mid the cedar's darksome boughs illumes,
With instant touch, the lori's scarlet plumes.

"How beautiful these lines are!" said Caroline, as she repeated them aloud one delightful afternoon, while seated at the open window of the drawing-room. "Though they describe a scene in South America, a valley near the Andes, yet I could fancy that, with some little alteration, they might be applied to this lovely place. Look at those venerable oak trees."

Where, through the trunks, with moss and lichens white,
The sunshine darts its interrupted light.

"Caroline is becoming quite poetical!" said Mrs. F. "But where are the humming-bird in its myrtle bowers, the cureu, and the thenca, and the purple cogul?"

Caroline smiled. It appeared that she had learned the verses because she liked their sound; but that she had never properly understood them.

We believe this to be the case with many young people of Caroline's age: their attention is caught by the sound of agreeable poetry, and they learn to repeat it by heart; not for the beauty of the description or the subject, but merely because it pleases the ear, and gives rise to agreeable sensations."

"What is meant by the *chrysomel*, my dear?" said Mrs. F.

Caroline blushed, and replied, "Perhaps it is an insect, ma'am; I do not know, but I liked those two lines because they are so pretty.

> "The chrysomel and purple butterfly,
> Amid the clear blue light are wandering by."

"The chrysomel is a beautiful insect, of which the young women of Chili make necklaces," said Mrs. F. "Then the humming-bird: I need not describe that: you know already that it is an elegant little creature, and obtains its name from the humming sound its twinkling wing causes in the air. Then the *cureu* and the *thenca*."

Caroline was again at a loss, and wished she had asked Emmeline what they were. "But they are certainly birds," said she, "because they sing."

"Yes, they are birds of Chili," said Mrs. F., "remarkable for the sweetness, melody, and richness of their notes. The thenca is supposed to be a species of the Virginian thrush (*turdus polyglottus*), called the four hundred tongues, from the variety of its notes. And now for the 'purple cogul?'"

This puzzled Caroline more than either of the preceding questions, and she again wished she had applied to Emmeline. "Mrs. F. must think me uncommonly ignorant," said she to herself; "she heard me admiring those beautiful lines, for beautiful they certainly are; and now she imagines that I repeated them by rote, like a parrot, without even knowing their meaning. I will never again learn poetry that I do not understand."

We have reason to believe that Caroline kept her resolution; and we wish that all our young friends would, in this respect, follow her example.

"The cogul is a most beautiful climbing plant," said Mrs. F. "Its long stalks and tendrils are extremely slender, of the size of packthread; it climbs on the trees without attaching

itself to them, as ivy does: when it reaches the top it descends perpendicularly; and as it continues to grow, it extends itself from tree to tree, until it offers to the eye a confused tissue, forming some resemblance to the rigging of a ship." *

Just as Mrs. F. was giving Caroline this description of the cogul, a group of gay little girls burst into the room.

"Dearest Caroline, are you not ready? The pony carriage is at the door—here is your parasol, we thought you were waiting for us; do run and put on your hat as fast as you can."

Caroline had been so much engaged with the poem she was learning, as nearly to have forgotten that they were going to have a *fête-champêtre* at a rural cottage about three miles off. The land around this cottage belonged to Mr. F.'s estate, and was occupied by one of his tenants; it was just hay-making time, the fields were to be cleared—the last loads carried away this very evening; therefore the children wished to be present, in order to enjoy for the last time the delightful fragrance of the new-made hay,

* Molina.

and arrangements had accordingly been made for them to drink tea at the cottage.

The pony-chaise was to accompany them, that they might walk and ride alternately; when one was fatigued with walking, she might ride, and when another was weary with riding, she might walk.

Caroline was ready in a few moments; the chaise was at the steps, the tin-box for flowers —for they had become great botanists,—was placed under the seat; and Laura, Emily, and Augusta, who were to ride the first mile, were soon seated in it. Little Lucy, being considered too young for the excursion, was left at home; so Caroline, Anna, and Ellen walked on, followed by a nursemaid, to take care of Augusta and George, who carried a basket upon his arm, filled with milk, plum-cake and fruit.

The evening was delightful: Caroline fancied even more delightful than an evening spent in the valley, so beautifully described in the lines she had been repeating. The vocal choristers of the grove carolled their lays of love, or seemed anxious that their melodious notes should ascend in grateful praise to heaven; the rook

rocked itself upon the light and flexible bough of the tall ash; and all the little feathered tribe warbled songs of joy, which filled the air with gladness. The wreaths of roses and woodbines in the hedges vaunted their gay clusters, and diffused a balmy fragrance. The new-made hay-rick—the waggons slowly passing along—the shouts of children—and the joyful voices of the haymakers, as they were finishing the last loads, gave an air of life and animation to the scene.

At length our little party reached the destined cottage; and having left the chaise, and begged that tea might be ready by six o'clock, they proceeded towards the hay-field, to ramble about at pleasure.

Emily carried the tin-box: and when they had enjoyed themselves for some time among the new made hay, and the younger ones had played many infantile freaks with each other, they reached a little stream at the farther end of Mr. F.'s meadows, and began to look for flowers. Some beautiful white water-lilies first attracted their attention, but these they could procure nearer home; they rambled on, and pre-

sently some majestic flowers, of a yellow colour, were seen.

"Ah," said Caroline,—

"On its soft breast the wand'ring stream
Reflects the flag-flower's golden gleam."—

"However, these we can find in the brook at the bottom of the park, so it is not worth while to crowd our tin-box with plants we can get at Grove Cottage. But what is that tall, elegant plant yonder, with a large umbel of pink flowers?—oh, I know what it is, is it not uncommonly beautiful? Do you remember the lines that Emmeline repeated, when she was describing it to us?

"Her rosy umbels rears the *flowering rush*,
While with reflected charms the waters blush."

"We must get it, indeed we must."

"But that is impossible, quite impossible," said Laura. "It is in the middle of the stream. Do not attempt it, Caroline."

"Lend me your parasol, my love," said she, forgetful of the danger to which she was exposed, "I will procure it if I can; it is so

very beautiful, and perhaps we shall never see another."

In endeavouring to reach it, the little tuft of soft earth upon which Caroline stood gave way, and she would inevitably have fallen in, had not Emily and Laura, who stood close by her, caught hold of her frock, and rescued her from the perilous situation in which she had placed herself; but, notwithstanding the danger to which she had been exposed, her wish to gain the flowering rush still overcame her prudence; for when the other children, convinced that the attempt was fruitless, and fully believing that their companion was aware of the danger, had rambled forwards by the side of the brook, in search of a similar one, she determined, if possible, to procure the object in view, beckoned to a little boy, who was seated under a haycock, munching a great piece of bread and cheese, to bring her a rake that was lying on the ground at a little distance. He came forward in a moment:

"Let me reach it for you, miss," said he. "Is it that tall, red thing? Oh, I can reach it very well: don't you come too near the water's edge, ma'am, I will soon give it to you."

But the good-natured little fellow happened to place his foot upon the same deceitful clod on which Caroline had stood; it would not bear another pressure, but gave way, and precipitated him into the stream.

Caroline's screams brought the other children back in a few moments, and their united shrieks had, in a very short time, collected several of the haymakers together. One man, in whose countenance distress was strongly depicted, threw off his jacket in a moment, plunged into the stream, caught the body of the child, apparently in a senseless state, again reached the river's side, and, by clasping his arm round the trunk of an old willow that drooped over the water, and the aid of one of the men, he regained the dry land, and hastened with his child towards the cottage. The news had already reached it: a warm bed was prepared, and medical assistance procured almost immediately; as fortunately Dr. ———, in returning to Egremont from one of his daily rides, happened to pass by the cottage just as the accident took place. Indeed such prompt measures were taken, such excellent means used, that in the course of half

an hour the little William breathed freely, opened his eyes, and looked around, at first scarcely knowing where he was; but his recollection gradually returned, and he soon recalled the circumstance that had placed him in his present situation.

Poor Caroline, in the mean time, had seated herself under the willow, and was weeping so bitterly, that it seemed almost in vain to attempt to console her. She reproached herself with having forfeited the child's life; she felt that the danger to which she herself had been exposed, ought to have warned her not to attempt to place a fellow-creature in the same situation; she blamed her own imprudence, thought of Laura's remonstrances, of the distress of William's parents, and again she wrung her hands and wept.

But while the children were endeavouring to moderate her grief, a messenger came from the cottage, announcing that little William was pronounced out of danger; resuscitating means had been so quickly applied, and he had been for so short a time under water, that, although for the first few minutes insensible, yet his na-

tural recollection, strength, and cheerfulness, were soon restored, though he was not allowed to rise again that evening. The children hastened towards the cottage, and found, what they had not known before, that William was the son of Mr. F.'s tenant. It was a pretty, rural habitation, overhung with flowers, and surrounded by tall trees; tea was ready, the kettle was singing on the fire, and William's mother was cutting some cake for the young ladies' tea. Caroline went towards her, took her hand in an affectionate manner, and begged to see her little boy. "He is better now, thank God," said the poor woman; "I thought, when I saw his father bring him in about an hour ago, that I should have lost him: but he is now like himself again, and says he is only sorry he did not get the flower for the young lady."

"May I see him? may I see him and thank him, and tell him how much I regret what has happened?" said Caroline, and the tears came again into her eyes. "Yes, madam, surely: but do not distress yourself," said Mrs. Thompson, opening the door that led up stairs, and showing Caroline, Emily, and Laura into a small

but clean room, the walls of which were white-washed, the roofs were sloping, and the bed upon which the young invalid lay was destitute of curtains: but all wore an air of comfort and neatness which delighted the Somersets, who had never before been in the chamber of a poor person. As they approached the bed, William raised himself up, smiled, and said, "I am only sorry I could not get the flower, miss: I should be glad to do any thing to oblige ye."

"Do not think any more about the flower," said Caroline, "only tell me you forgive me for having been the cause of your accident. But I have suffered enough for my imprudence—I will never, never again be so thoughtless as to expose any one to danger for my pleasure."

"You are very good, miss," said William, in a grateful tone, "but indeed it was no fault of yours; and if the same were to come over again, I would do it again to please you."

A tall, pretty-looking girl, who had been sitting by the bed-side, now rose, and seeing that Caroline was agitated, gently hinted that the medical attendant had desired that William might be kept quiet that evening, and that most pro-

bably on the morrow he would be perfectly well.

Laura and her friends withdrew; and with the assurance of his speedy restoration their cheerfulness returned, and they joined the young party, who were at tea in the large open kitchen below, in good spirits.

Tea had been deferred to a later hour than was originally intended on account of the accident, and when it was done, the appointed time was come for them to set out on their return to Grove Cottage: for as those who were to walk the last mile, might shorten the distance by crossing a field or two, Mrs. F. had particularly desired them to return early on account of the dew.

The chaise was soon ready, and having said all she could to apologize for having been the cause of an accident which had, for a time, occasioned so much anxiety, Caroline placed herself by the side of Laura and Augusta, and they drove along the little winding lane towards home.

Having reached the stile that led across the fields, they gave up their place in the little ve-

hicle to the others, and proceeded along by the foot-path. They had not walked far before Mr. F., who had been giving directions respecting some alterations that were about to be made on his estate, overtook them.

"Well, my dears," said he, "I hope you have enjoyed your little excursion?" Caroline took hold of his hand, but knew not how to speak, and Laura felt equally unable to recite what had happened. "What has occurred?" inquired he with anxious solicitude, "are all the children well?"

"Yes, papa, all are safe and well," replied Laura, gaining resolution, "but little William Thompson has fallen into the water."

"Fallen into the water!" said Mr. F., "how was that? Is he drowned?"

"No, papa; he is getting better."

"Yes, he is better," said Caroline, "Dr. —— thinks he will be well to-morrow," and she now repeated, with a candour and generosity that did her credit, and not without many reproaches for her own folly and imprudence, a circumstantial account of the event which had happened in the hay-field.

Mrs. F. was anxiously anticipating the return of the children, as the appointed hour was past, and the sun, lately so bright and glorious, was hiding itself in a mantle of mist, and bidding good-night to Grove Cottage. As soon as she perceived some of the party advancing along the carriage road towards the house, accompanied by Emmeline, she advanced to meet them. It was not long before they were made acquainted with every circumstance that had transpired in the course of the afternoon. They affectionately sympathised with the parents of the child, and agreed to go over to the farm the next morning, in order to see how he went on.

"It was entirely my own fault," said Caroline; "Laura begged me not to attempt to gather the flower, but I wanted it so much—and when I am once determined upon an object, I seem as though I could not rest till it is accomplished—that I forgot little William was just as likely to fall into the water as myself—I forgot all about prudence and care: however, this accident shall not be thrown away upon me, for whenever I feel inclined to give up prudence to pleasure, I will think of the *flowering rush*."

"Caroline has a generous and affectionate heart," said Emmeline, as her young companion ran forwards with the rest of the children, who now joined them, in order to put the plants they had brought home in the tin-box into water. "I hope and believe, that this circumstance will make an impression upon her, which will prove of essential service in restraining her volatile disposition, and teaching her *to think before she acts.*

On the morrow the children were dressed by six o'clock; the pony-chaise was again at the door, and Emmeline and the Somersets were soon stationed in it. On arriving at the cottage, they had the satisfaction of finding that William was already up and gone out to work, a proof that he was perfectly recovered. They congratulated his mother upon the circumstance, who appeared full of joy.

"For," said she, "I thought I should have lost him."

"Such an accident *might* have proved fatal," said Caroline. "I am very grateful that it was no worse, and that the good-natured little William is so soon restored to his usual strength;

and," she again repeated, "I will never forget the flowering-rush, nor the consequences of imprudence."

THE MICROSCOPE.

One week rapidly succeeded another, each successive one appearing to fly with more swiftness than the last; and the time was quickly approaching for Caroline and Emily to leave Grove Cottage. They could never think upon this subject without a mixture of regret. They knew that, under Emmeline's kind tuition, they were making rapid progress in many branches of their education; they could apply to her at any time for advice or instruction; she was always at hand, always ready to answer their questions. Tenderly as they loved their mother, they had not been accustomed to enjoy much of her society in London, except on an evening now and then, reserved from the daily routine of company for that very purpose: company at home and engagements abroad, added to her delicate health, had rendered her almost incapable of attending to them.

"But it will be very different when we get to Aston Hall, for there mamma says, she shall devote all her time to us, and that the drawing-room will not be crowded with company every night as it was in London," said Emily to Caroline, one morning as she entered the breakfast-room.

Caroline was so busily engaged about something at the table, that she made no reply to what her sister had said.

"What are you doing, Caroline? what are you so very busy about?" said she, advancing towards her.

"Mr. F. has just made me a present of this microscope," exclaimed she: "such a useful and wonderful instrument! I am looking at the wing of a peacock butterfly, and it appears a thousand times more beautiful than any butterfly I ever saw; what we have sometimes rubbed off upon our fingers, and thought it was only dust, is, in reality, feathers—the most beautiful feathers you can possibly imagine, Emily. Do look at the wing of this butterfly."

Emily bent down to the microscope, and peeped through the glass.

"How astonishing!" said she; "instead of appearing any longer like dust, they are indeed real and beautiful feathers, as rich and as soft as velvet, and surpassing even those of the peacock itself. But what else have you there? What, are you going to look at the wing of that dragon-fly? I do not expect that will appear at all curious."

"Oh! but it does appear very curious, indeed," said Caroline, "and Miss F. is gone to fetch several other little things for us to look at. I will place this little *wee-wee* bit of the dragon-fly's wing upon the object glass, in order that you may see it." Emily looked again.

"Ha! ha! you are right," said she. "It looks like a piece of the lace trimming upon my frock. What a wonderful instrument this microscope is: it makes every thing appear so much larger than it is in reality. I think it is almost as curious an invention as the telescope. Here is Emmeline. Oh! Miss F. what have you got upon that plate? Cheese! a bit of cheese! what are you going to do with cheese?"

"I have brought it in order to shew you

some *mites*, my dear, by the aid of the microscope,—

> Whose small convex
> Enlarges to ten millions of degrees,
> The *mite* invisible else, of nature's hand,
> Least animal: and shows what laws of life
> The cheese inhabitants observe, and how
> Fabric their mansions in the harden'd milk,
> Wonderful artists!"

"But you do not mean that there are any mites upon that piece of cheese?" said Caroline, with an inquiring look.

"I do, indeed," said Miss F., as she placed the morsel of cheese upon the glass. "Now tell me what you see."

"Ah! I perceive an immense multitude of small transparent animals, of an oval shape; they have each eight scaly legs: how fast they move —now this way and now that; they all appear as busy as bees in a hive."

"The innumerable species of insects that are only discoverable by the microscope," said Emmeline, "afford an unceasing source of entertainment and instruction to the admirer of nature's minutest works. The whole earth is replenished with an inexhaustible store of what

we should least expect; an infinite number of animalculæ float in the air we breathe, sport in the water we drink, cover every leaf, and adhere to every object upon which we turn our eyes. Even the bloom of a plum consists of innumerable insects, so that when we rub it off, we destroy thousands of living animals. No product of nature is unpeopled by others of its creatures; all attest the wisdom that gave them birth."

"Here is a mallow!" exclaimed Anna, running into the room with a pink flower in her hand, "I have been fetching it out of the lane, on purpose that Caroline might look at the dust —the farina, I mean—upon the anthers or top parts of the stamina."

"How very curious!" said Caroline, when she had looked through the glass for a moment. "Each little particle of farina is toothed like the wheels of a watch—so perfect, so exact!"

"The farina of flowers is found to be regular and peculiar to the plant that produces it," said Emmeline. "That of the mallow is a little round ball, surrounded by an edge, which makes

it look, as you say, like the wheel of a watch. Now look at the farina of this tulip?"

"Ah! that is quite of a different form—it looks like the seeds of a cucumber."

"Now for the farina of the poppy."

"Wonderful! it looks like grains of barley, and a little grove runs across every grain."

"The most minute parts of nature are finished with an elegance that far surpasses the finest efforts of art," said Emmeline.

"Do you think so?" said Caroline. "I thought that *some* of our most beautiful manufactures were as nicely finished as some of the productions of nature."

"I believe, I can soon convince you to the contrary," said Emmeline, rising and going towards her work-box. "Let us take a needle, for instance; I suppose you will allow that a very fine little needle is one of the most highly-finished productions of art."

"Yes, certainly," said Caroline, "I do allow it."

"Now look at it," said Miss F.

"Is it possible! is it possible that this great clumsy thing can be the fine little needle with

which you were working Lucy's cap? The point looks quite blunt, and more like a peg broken at the end, than a fine sharp-pointed steel needle."

Emily looked also, and agreed with her sister, that it was scarcely possible to imagine the needle in the microscope the same needle as that with which Emmeline had been at work.

"Now observe the edge of my pen-knife," said Miss F. "Its highly-polished steel-blade is the effect of art."

"It appears more like the back of a large carving-knife," said Emily, "than the blade of a fine set pen-knife; it is very rough and full of irregularities. How different from the nicety with which the wing of the butterfly and the farina of the mallow are finished! I see you are right; but you are always in the right."

"I wished to convince you," said Emmeline, "that the works of art, when brought to the highest degree of perfection, will not do to compare with the operations of nature. Those of the latter, when exposed to the microscrope, far from losing their lustre and their polish, assume more beauty, regularity, and order. The micro-

scope is an avenue to unseen glories in new worlds, and makes us acquainted with millions of living creatures of which we had never before formed an idea.

" I should like you to look at a drop of vinegar through the magnifying glass," continued she, ringing the bell, and desiring the servant to bring some in a saucer, which had been previously exposed to the air for a short time.

Emmeline placed a drop of this vinegar, by means of a camel's hair-brush, on the transparent object plate of the microscope.

" Now, my dear Caroline," said she, " tell me what you see."

" Oh, little animals! little animals somewhat resembling eels! How they are moving about; leaping over each other, and enjoying themselves as much as the gold fish do in the fish-pond, when the sun shines. How astonishing, that there should be hundreds of insects in that little drop of vinegar—animalculæ, as you call them—and yet they seem to have as much room to move about as if they were in a large fish-pond. What a curious contrivance this microscope is! Who would have had any idea that nature was

so full of life as it is! or that the bloom of a plum, or the down of a nectarine, is composed of minute insects, all of which are formed in as perfect a manner as the animals we are accustomed to see with the naked eye. Emmeline, will you repeat those lines you were translating for Anna, the other morning."

"Author of all! How bright thy glories shine!
How pure, how perfect is thy least design!"

"They are particularly *à-propos* to our present subject," said Emmeline, "for we do indeed discover perfection in the smallest, the most insignificant works of nature: perfection which those who do not accustom themselves to the *habit of observation*, a quality that I have often recommended to you, would pass by unnoticed.

"But I have not yet exhausted my little store of little objects. I am now going to place the horns or antennæ of a tiger-moth upon the glass. You see how small they appear to the naked eye—now look at them."

"Ah, they are magnified indeed!" exclaimed Caroline. "They are more regular, more perfectly formed than the most beautiful feathers I ever saw in my life: and so large—quite as

large as a goose-quill—but what have you next?"

"The leaf of a stinging nettle."

"A stinging nettle!" exclaimed Emily, in a tone of surprise. "I did not know that the leaves of stinging nettles were covered with long sharp pointed spikes like these; and they all terminate in little balls upon the leaf."

"Those little balls or globules are bags containing the poison, which occasioned you so much pain when you were gathering flowers in the lane, the other morning. Each little bag is full of poisonous juice, and when they are pressed, this juice is forced up the spikes or stings, and occasions those disagreeable sensations which I dare say you will in future carefully guard against.

"I have brought some particles of sand to shew you. There are two sorts of sand: the calcareous, and the vitrifiable: the calcareous, you may observe, appears like large irregular fragments of rock; but the vitrifiable seems to resemble so many rough diamonds glittering in the sun-beams."

"How wonderful! how astonishing! how

curious!" said Caroline, "I must thank Mr. F. again for his kind and useful present, for it has put my thoughts into a new train, and given me many fresh ideas. I never mean to walk out again without bringing home some object to examine through my microscope. How delighted Edward will be with it; for he is as fond of admiring the beauties of nature as I am now become."

Caroline was just asking Emmeline to shew her something else, when she was interrupted by the entrance of Mr. F., with a letter in his hand.

"This letter, my dear Caroline, is for you," said he. "I have just received one from your father; and, sorry as we shall be to part with you, much as we shall regret your absence; yet I trust that the beauties of Aston Hall will soon compensate for those of Grove Cottage."

"But where shall we find another Emmeline —another Laura, Anna, and Ellen!" said Caroline, with emotion, as she advanced to receive the letter. The seal was presently cut open— she seated herself upon the sofa, and her colour came and went as she hastily glanced at its contents.

"Papa is coming next week," said she, as she put it into Emily's hand. "This is Friday, and we have only a few days to stay with you—only a few more days to pass at the place where we have spent the happiest hours of our life. Miss De Horne is already at Aston Hall, and mamma and the little ones are there also: so we are not to go to Matlock, but to return direct through Manchester and Birmingham to Worcester. I want very much to see my dear mamma: but then to leave you—you, who have been so kind and so good to us!"

The tears came into Caroline's eyes, and she threw herself into the arms of Emmeline, who led her out of the room in order to compose herself.

THE LAST EVENING.

Caroline and Emily had no time to lose. Tuesday was the day fixed upon for their departure from Grove Cottage, and their father had announced his intention of arriving there on the preceding evening. Three days was a very short time for them to accomplish all they wished; for, amidst the bustle of preparation, they had

many favourite spots to revisit, many walks to retrace, and many poor people to take leave of, with whom they had formed an acquaintance during their residence in Cumberland.

"The word *last* is certainly a melancholy word," said Laura, as she was wrapping Caroline's colours in silver paper, and arranging them in her drawing-box; "but you must not fancy that this is the last time we shall ever see each other. Mamma says that perhaps we shall pay you a visit at Aston Hall next summer, if we go to Aberystwith; and besides you will, no doubt, come to Grove Cottage again before very long; and you know we can write to each other. You must write nice long letters, Caroline, and tell us how you are going on; how you like Miss De Horne, and whether Aston Hall is as pretty a place as you expected, and what progress you make in astronomy; whether you have discovered the comet, and how you get on with botany; how many plants you have dried, and whether any flowering-rushes grow in your streams."

At the recollection of the flowering-rush, Caroline smiled.

"I shall never forget little William Thomp-

son," said she; "but we must go and take leave of him, my dear Laura, indeed we must. Is the pony chaise at liberty? cannot we take a ride to the farm before dinner?"

"I am afraid William would be gone out to work," replied Laura; "but if you like we will go in the evening, and make the best use of our time, by calling on some of the poor people in the village now."

"That will be by far the best plan," said Caroline, rising from her seat, "though I cannot say I much wish to visit the pretty cottages by which we have so often rambled, and where we have so often been, and to think that I am to visit them no more."

"You must not say so," exclaimed Laura with affectionate earnestness. "Let us at least indulge the hope that we shall meet again. Even if that hope should not be realized, we shall have had pleasure in the anticipation."

Emily met her sister in the gallery, and they went together towards their own room to equip themselves for the walk, and to fetch some baby linen which they had reserved as a parting gift for some of the poor people. This benevolent

distribution seemed to revive their spirits, and they repaired to the parlour with countenances as smiling as ever.

Their three companions, Laura, Anna, and Ellen, were ready as usual, and they had soon left the park, and were on their way to Sally Moss's cottage.

"Do not let us forget to call on the old man in the lane," said Emily, "the good-natured old man who took the bit of packthread, with which his carnation was tied up, to make a string for my patten the other day, when he saw I could not wear it because the ribbon was broken. I shall often smile when I think of that good-natured old man; and I shall keep that bit of string in remembrance of him."

"Let us call there first, shall we?" said Ellen, "you see we are very near his cottage."

This proposition was readily agreed to by Ellen's companions, and they made a little turn in the road which brought them directly to the cottage, where they found Emily's good-natured old man at work in his garden.

"We are come to take leave of you, Thomas," said the Somersets, advancing towards

him "We are going away from Grove Cottage in a day or two, and we wished to speak to you once more."

"You are very good, ladies," said the old man, laying down his spade, and conducting the children to the porch before his house. "Will you please to sit down here a little while, the woodbines smell very sweet just now; but I am heartily sorry ye're going; we shall miss ye very much, for ye've been very good to all of us poor people: however, our blessings will go wi' ye wherever ye go!" As Thomas spoke he brushed a tear from the corner of his eye; and several of the children endeavoured to hide those which had involuntarily made their appearance in their own.

"But we must not stop to sit down," said Laura, "because we have so many places to call at before dinner."

"Do stay a minute, Miss," said the old man, reaching, at the same time, a large knife from his pocket. "Let me give the young ladies a flower or two to remember me."

Thomas began to cut the flowers forthwith, and before they had time to stop him had col-

lected quite a handful of roses, pinks, and woodbines.

"You have gathered the very carnation that was tied up with the bit of string you were so good as to put into my patten," said Emily. "I am really sorry you have gathered it, Thomas, because I know you were taking particular pains to have a fine blossom: and a fine one it certainly is; but I wish you had not got it."

"Oh, I gathered it on purpose, Miss; and if it had been a hundred times as fine I would have done the same. If your patten string had not broke just when it did, mayhap I should never 'a known ye, and the knowing o' ye and Miss F.'s is the happiest thing o' my life, and I humbly thank ye for all your goodness."

The young people, though somewhat amused at Thomas's gallantry, could scarcely refrain from tears, when they saw the poor old man repeatedly brush his own away with the corner of his coat; and, at length, having taken leave of him, they proceeded to the cottage where Sally Moss lived. Her children clung around them when they heard that they were come for the

last time, with loud exclamations of sorrow. Caroline and Emily felt many of those pleasing sensations, which generous hearts alone can feel, during this little round of leave-taking visits; and it was surprising to observe with what real regret the poor cottagers parted with them; some offered them their choicest flowers; others brought fruit; and one little girl, whom Caroline had assisted Laura in teaching to read, brought a work-bag, which she said she had made on purpose for Miss Somerset. All wished them a safe and happy return to their own home, and, like old Thomas, "blessings wherever they went!"

Such are the pleasures of benevolence!

Pleasures springing from so pure a source are far, very far superior to any that the world can offer, because they originate *in ourselves*, and the exquisite consciousness of *deserving* praise cannot, to the truly good mind, be otherwise than productive of satisfaction.

After tea our young party took a ride, as agreed upon, to the farm. William was fortunately at home, and Caroline and Emily presented him with a handsome Bible, begging him

to accept it in remembrance of the event by which they had first become acquainted.

The parting scene was affecting; but, as Mrs. Thompson observed, "in this world we must expect separations."

Saturday passed away, and Sunday was as quickly gone. Monday evening soon came, and the children stationed themselves at the park gates in anxious expectation of Mr. Somerset's arrival. At length his chaise appeared in sight, just rising above the brow of the long hill upon the Egremont road; he drove rapidly towards them, the servant in waiting held his horse, he alighted at the gates, and Caroline and Emily were immediately in his arms.

Joy at first rendered them incapable of speaking, for although they were sorry to leave the delightful residence which was now become as a home to them, they were naturally rejoiced to see their kind and indulgent father, after so long an absence. Numerous inquiries succeeded the first embraces, numerous questions were asked, and numerous answers given. When their emotions of pleasure were a little subsided,

and when tea was over, the children and their parents sauntered around the grounds belonging to Grove Cottage. Caroline and Emily, with feelings they had never before experienced, retraced the broad nut-tree walk where the charity-girls had sung in chorus on Anna's birthday: visited the conservatory, the hot-houses, and the green-house, and took a last look at their favourite plants: paid another and another visit to their little gardens, which were now gay with the annuals they had planted; took one peep at the aviary, and another at the swans in the fish-pond; and felt no inclination to return to the house, till the breezes of evening blew coolly around them, and the supper bell was heard.

We shall not attempt to describe the parting scene: the fertile imaginations of our young readers will easily picture the mutual embraces that took place, the many assurances of affection and friendship that were uttered—and, above all, the promise never to forget the happy months they had spent together at GROVE COTTAGE.

THE

INDIA CABINET

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THE

INDIA CABINET.

CHAPTER I.

It will be a long time before we come to the India Cabinet. We must describe the country in which Ellen lived, and many other circumstances that will lead us to it.

In the first place, a *lake* is a sheet of water every where surrounded by land. The lakes of Westmoreland and Cumberland (two counties in the north of England) are celebrated for their beauty. Around them wild mountains rise one above another, pointing their blue heads towards the sky; in other parts gentle hills are seen covered with waving woods, and spotted with villages, seats, and farms.

At the foot of a range of rocks is that called

Coniston Mere, *mere* being another word for lake. It is of an oval form. Its banks are overhung with dark underwood, and a little island covered with shrubs rises in the middle of it.

At one end of this beautiful piece of water, in the hollow between two hills, stands the pretty village of Coniston, with scattered cottages, and its parish church, whose bells sound sweetly across the lake.

There is a slate-quarry among the mountains about this place. Many of the slates are so large as to be used for walls or fences, and in building; indeed some are so high that little huts are entirely formed of them. Very high rocks rise on each side of the quarry, composed of slate and earth. The workmen are let down by a rope fastened securely round their bodies: with a sharp instrument they separate the slates from the rock, and put them into baskets provided for the purpose. Other cottages are rudely built of loose stones, covered with turf, which is overgrown with ferns and mosses.

But do not imagine, my little friends, that all the houses about the lakes resemble these.

No: there are many country-houses, villas, and pretty white-washed cottages, scattered among, the woods and mountains. In a delightful spot near the village of which we have been speaking stands Belmont Grove, the home of the little Ellen. A large and cheerful family had taken up their abode in this residence for a few summer months, that they might enjoy the scenery around the lakes. Under the tuition of a kind elder sister, Ellen was instructed and rapidly improved. Gentle, affectionate, and lively, she was the darling of all who knew her—it is a thing of course to be beloved when we are good.

Attended by their nurse, the little ones would often ramble about the woods and hills, to search for wild flowers that grow among them, and bring them home in triumph to Isaline, whose knowledge of botany enabled her to tell them their names, and the classes to which they belonged. In some places, the mountains were gray with mosses, green with ferns, or white with lichens—a curious sort is common upon them, called the *geographical lichen*, because it bears a resemblance to the lines of a map; it

is of a bright green, veined, and spotted with black.

One pleasant morning the sun rose with unusual splendour, a few white clouds only were seen floating in the sky; the smoke gently ascended from the scattered cottages in the village, and the little birds warbled among the green boughs, when Ellen knocked at her sister's door, exclaiming,

"Isaline! Isaline! are you ready? Charles says the cart is coming down the lane."

A large party was formed to spend the day upon one of the mountains, and as it was to be in a gipsy style, a cart was proposed as the most suitable mode of travelling. Indeed *two* carts were engaged for the purpose: and after an early breakfast, Ellen, her mother, and sister Isaline, mounted the one; the other contained two nurse-maids, little Frederic, Clara, Lucy, and Harriet; a tea-kettle, a basket of provisions, and some bottles of wine and milk; for they intended to take tea in a wood at the foot of the hill overlooking the lake.

In this rustic way the happy party journeyed along. The novelty of the thing delighted the

children: Ellen, who had never rode in such a vehicle before, was amused with its jolting motion; Frederic thought it was much more easy than the carriage he had been accustomed to ride in at home, and the three little ones laughed and talked without ceasing. At length, all life and merriment, they arrived at the destined spot, and were joined by their father and brother, who had followed them on horseback.

It was agreed that they should seek for a cottage, where the younger ones might remain under the care of Mary and their nurse, whilst the others climbed the broken sides of the mountain.

A fisherman's hut was presently found, and the civil people begged that the little ladies would please to walk in. Some rosy children were standing at a three-legged table eating potatoes: the mother was employed in making oaten cakes, which are used instead of bread by the peasantry in this country. Her dough being laid on a large round board, she clapped it out with her hands till it covered the board, then slipt it off upon a round iron plate of the same size, which was placed over a wood-fire, and

when the cake was crisp on the one side, as it soon became, being very thin, she turned it. The fisherman himself was mending his nets: but the moment he saw the gentry (as he called them), he laid down his work and came forwards.

"Our hut is a poor place for such gentlefolks as you, madam," said he, addressing Ellen's mother, "but you are heartily welcome to any thing we have."

"Thank you, my good man," replied she, "but we are going to ascend this mountain; the little ones, however, shall remain about here." And as she spoke they accepted the good-natured fisherman's invitation. Ellen looked with surprise at the thinly-clothed children, whose cheeks glowed with the ruddy hue of health, and whose countenances expressed equal astonishment at the company they beheld, and they ran about the little room, clattering in their wooden shoes; for the poor people in this part of the world seldom wear any others.

The cottage was neat and clean. As we have said, a little table stood in the middle, and the rest of the furniture consisted of five or six deal

chairs), and a cradle, in which a pretty plump baby was fast asleep.

It was adjusted for the servants and children to dine in the cottage, whilst the elder ones were absent, and that on their return they should join them in the wood, where the kettle might be reared between some high poles, and gipsy-like, they should take tea there.

"You, my Ellen," said her father, "had better remain here. So long a ramble will fatigue you too much."

"Me, papa! oh no! do let me go with you, and you shall see that it will not tire me!" exclaimed the active girl.

Consent having been gained, Charles, Isaline, Ellen, and their father and mother, attended by a boy as guide, left the hut and began to ascend the mountain, which, like the sovereign of the place, erected high its pointed summit, and sunk with many irregular swellings into a rich plain waving with woods.

"What a delighful day it is, mamma!" exclaimed Ellen, "I am glad that I did not stay in that fisherman's hut!"

"Perhaps you will not say so in the even-

ing," said her mother; "you will probably wish then that you had remained there."

The boy who was taken as guide, now conducted our party along a green path up the side of a hill; as they advanced higher and higher, the views around became more extensive: they seemed as if leaving the world behind them, and presently the road became so very steep, that it was agreed that Ellen, Isaline, and their mother, should sit down upon a rude seat, formed by a pile of loose stones with gray moss growing between them, and there enjoy the beauties of the boundless prospect — that is, one which extended as far as the eye could reach, until the distance became dim and indistinct. The sea could just be seen, and instead of appearing like swelling waves just ready to burst over one, it looked, as Ellen said, like a faint blue cloud.

As they sat on these stones they opened the basket, and, after having refreshed themselves with cake and wine, Isaline took out her pencil and sketch-book, and began to draw a rough view of the opposite mountains, the lake below, and a village spire peeping above the trees, which altogether formed a beautiful landscape. Ellen,

although she was not allowed to scramble higher, ran first on one side and then on the other, to collect different sorts of moss, with which the place was covered; and she was also delighted to find the stone-fern, or mountain parsley, a lovely plant in any situation, but appearing still lovelier here, because few flowers were to be found so high.

Charles, with his father and the guide, continued to ascend, unwilling to lose the extensive prospect which was soon to repay their trouble. The winding path was so steep that they were sometimes obliged to stop for a minute or two to take breath. The wildness of the scene was often increased by the roaring of torrents, which were seen falling from ledge to ledge, with their white foam glistening among the dark rocks and dashing into basins beneath. The lakes in the valleys looked like small pools, and they could now look down upon mountains which had before seemed high. They at length reached another pile of loose stones, which was erected on the summit, and formed a good seat. Here they were gratified with the wished-for view. On one side, rock seemed to rise above rock,

forming a chain which was almost lost in the clouds. On the other side were seen the Isle of Man, in the Irish Sea, lying like a faintly formed cloud on the bosom of the ocean; and above it Solway Frith, and a range of Scottish mountains, which appeared like lines of still darker clouds. Villages, spires, towns, and country-houses, were scattered in the valleys below; and when Charles and his father had gratified their curiosity, and had scratched their names, as is usual for those who ascend this mountain, upon one of the loose stones which formed the back of their rustic seat, they descended the steep slippery path, and found Isaline, Ellen, and their mother, still engaged in admiring the beauties around them.

"How extremely cold it was!" said Charles; "I should have been quite glad, papa, to have warmed myself by a fire in the wood."

"Cold, Charles!" exclaimed Ellen. "Cold! now the sun is shining so brightly, and it is such a charming day!"

"Yes, my love," said her father, "Charles is right. As we ascended the mountain, the air became thin and piercingly cold, though it is so

warm a day in the valleys below us. Try if you cannot find out the cause."

"Indeed, papa, I do not know, and I have often wondered how it is that hail, which Charles says is frozen rain, should fall in the middle of a hot summer's day."

"The upper region of the air is so cold," said her father, "that even during the greatest heats, on the tops of some high mountains the snow does not melt all the year round; this also is the cause of hail—clouds are vapours or exhalations raised from rivers, and when condensed into drops they form rain, and fall to the ground by their own weight. In very cold weather, at least when the air at a great height is very cold, these drops are frozen as they fall, and form hail; and snow is formed by the freezing of a cloud before it falls."

"I understand now, papa," said Ellen, "and because the upper region of the air is so cold, the snow remains on high, very high mountains, without melting."

"Yes, my dear, although it be warm and delightful below. In Switzerland, the climate is genial and the country fertile: yet the tops of the

Alps, the highest mountains in Europe, are covered with perpetual snow; and in some parts of South America, which is as hot as any part of our globe, the air on the tops of the mountains is so intensely cold, that the traveller passing over them is in danger of being frozen to death."

They continued talking until they arrived at the spot which they had left in the morning, where they found the little party seated upon the grass near the fisherman's cottage. The boys, who had been eating a dinner of potatoes, were become sociable, and were now showing their little treasures to the young gentlefolks.

One pretty curly-headed fellow had brought out a deal box of shells and pebbles, which he was displaying before the admiring eyes of Frederic.

"When we lived in the hut by the sea-shore," said he, "we used often to find these things. One day I was climbing with my father over a great rock and looking for—"

The child saw Frederic's mother, blushed, and hesitated.

"Oh! mamma, dear mamma! I am glad you

are come back!" exclaimed the little Frederic. "I want to know whether we shall go to the sea-side this summer, mamma. Do you think we shall?"

"And why do you wish to go there so much?" said his mother.

"That I may scramble among the rocks, and look for shells, and sea-weeds, and stones, as this little boy used to do—and make little nets to catch shrimps in, mamma—and search for little pink-trees like these—look mamma!"

"We must talk about the sea-side another time," said his father—"You must now part with your little friends—they are very good-natured for having amused you so nicely."

So taking leave of the fisherman, slipping a handsome present into his wife's hand, and giving a large slice of plum-cake to each rosy boy, they departed, followed by the blessings of this industrious and grateful family. They crossed a stile and followed a winding path through a field, which brought them to the wood. A suitable place was presently found for the fire; it was in an open part, from whence a distinct view might be had of the lake. An old woodman,

who was lopping some elm-trees at a distance, came forward, and, understanding their intention, very civilly erected three poles, which he fixed in the ground about four or five feet apart in a slanting direction, so that they met at top: a faggot was presently found, and the old man pointed to some trees which had lately been cut down, saying they would make good seats. These stumps had been stripped of their bark, and Ellen found that it was taken for the use of the tanner, who employs it in making leather; but, as she was beginning to enquire about the process it has to undergo, her attention was taken off by the appearance of a number of birds skimming over the surface of the lake in every direction. In answer to her questions, Isaline told her that they were swallows, and that they were flying about in search of food.

"But what food," asked Ellen, "can they possibly expect to find growing upon the pond?"

"Flies and insects," replied her sister, "are their proper food; you have sometimes observed them sporting on the water."

"And swallows," said her mother, "are

thought to be of great use, by destroying many millions of them, which would otherwise multiply so fast as to become quite disagreeable."

"Can they catch them as they fly, mamma?"

"Yes, my love. Their mouths are made large, that they make take in their prey the more easily; and, indeed, every part of the swallow is wonderfully adapted to its nature and manner of living. As, in pursuit of insects, it is necessary for them to be almost constantly on the wing, their bodies are very light and small, and the wings being long in proportion, they fly with great rapidity and ease. This is particularly needful, because they are birds of passage."

"Birds of passage, mamma?"

"That is, they go to different countries, according to the season of the year. They come to England early in the spring, and assemble again in great numbers, 'ere yellow autumn from our plains retires,' and fly across the sea to some warmer climate.

"Instinct teaches them to do so, to avoid the severity of the northern regions.

"From the description I have given you of

the swallow, we may see that the great Being of whom you have so often heard has adapted it to the state for which he designed it."

"And," said Ellen's father, "not only every bird, but every animal, every insect that sports in the scented gale, every floweret that blows, and every leaf we examine, may convince us they are formed by the finger of God. Nature is the first and best volume of instruction: it is always open to you, and will undoubtedly repay your attention by inspiring an early spirit of piety and devotion."

"What a great variety of birds there are, papa!" said Clara. "Do you remember the little wren that built its nest amongst the moss in the hermitage last summer?"

"I am sure that I do!" exclaimed Ellen. "Mamma said that instinct taught the pretty creature to cover its nest with green moss, which, being like the rest, was not so liable to be noticed."

"I recollect," said Isaline, "watching a little willow wren creep up the stems of the crown imperial, and sip the drops of honey as they hung from the petals."

"It must be the smallest of all birds!" said Ellen.

"Of all in England, my love," said her sister: "but the pretty little humming-bird is still less. Of all the birds that flutter in the garden, or paint the landscape, it is the most delightful to look upon, and the most inoffensive."

"Oh, Isaline!" exclaimed Ellen, "how much I should like to see the humming-bird! In what parts of the world is it found?"

"In South America, which, as you have been told to-day, is a very warm country. There are six or seven varieties, from the size of the wren that built its nest in the hermitage, down to that of the humble-bee that is buzzing about the flowers by you. The Indians, charmed with the colours of these brilliant birds, gave them the name of rays, or hairs of the sun. They are seen in great numbers, and as frequent as butterflies in a summer's day, sporting in the fields of America, from one sweet flower to another, and extracting the honey with their little bills."

"Why, that is something like the bee using its

proboscis," said Ellen. "Will you now tell us about their nests?"

"They are very curious," continued Isaline: "they are suspended in the air, at the point of the twigs of an orange or a citron tree; sometimes even in houses, if they can find a small convenient twig for the purpose. One little bird is the architect or builder of the nest, whilst the other roams abroad in search of cotton, fine moss, and the fibres of leaves or plants. It is not larger than half an apricot, and is of the same shape, and warmly lined with cotton."

"How comfortable it must be!" exclaimed little Harriet, who had been attentively listening to her sister's account. "I should like to be a humming-bird!"

"But then you would not know what it is to be my little Harriet," said her mother, laughing. —"Girls are very different to birds: even supposing you could now sport from flower to flower, sipping honey from every blossom in the fields and gardens of South America, I guess you would soon wish to plume your wings and fly across the Atlantic again to

your dear mamma;—the state in which we are placed is the happiest for us all!"

"There are never more than two eggs found in the nest," continued Isaline; "these are about the size of small peas, and as white as snow, with here and there a yellow speck. Mamma has a nest with eggs in it, and a little humming-bird too, in her cabinet."

"In the India Cabinet in your dressing-room, mamma?" exclaimed the delighted Ellen. "Is it really true, dear mamma?—and will you allow me to see it?—when shall we return into Devonshire?—is the humming-bird stuffed?—where did it come from, mamma?"

"It is impossible for me to reply to all your questions at once, my dear Ellen. But to the most important I will return an answer. There *is* a little humming-bird in my India Cabinet, and when we return home you shall see it, provided you have patience to wait till that time."

"When shall we return into Devonshire, mamma?"

"In the course of three weeks, probably."

"That is a long time to wait, mamma—three whole weeks!"

"It will exercise your patience, my love: besides, you may enjoy many gratifications in that time, independently of seeing humming-birds."

"Oh, yes! that I may, and do, dear mother," said Ellen; and away she ran to tell Charles all she had heard. Charles's father had been telling him that the usual mode of producing fire among the savages is by the rapid friction of two pieces of wood till they produce flames; this saves the trouble of procuring flint and steel, and, as Charles remarked, must be very convenient to the Indians, who live an unsettled life; wandering from one place to another; sometimes erecting their huts, which are called wigwams, on the banks of rivers, where they have plantations of corn and rice, at other times in the woods. Their huts are generally built of small logs, and covered with bark; though some are made of stakes, and leaves, and turf, in the shape of a soldier's tent; others of reeds surrounded with clay. The fire is in the middle of the wigwam, and the smoke passes through a hole left at the top. The furniture agrees with the simplicity of the house; for it often consists of

nothing more than skins of wild beasts spread over a hurdle of bamboo canes, upon which they sleep, two or three low wooden stools, some brass kettles and pots for dressing their food, and a few bowls and calabashes or drinking-cups, made of the skins of the wild gourd, a fruit resembling the melon.

The fire in the wood had led to this conversation, which was now interrupted by exclamations from many little voices.

"Come, come, come, papa! Come, Charles and Ellen! The kettle boils—sings, as Mary says—and tea is quite ready!" The tea equipage was placed on the stumps of two or three of the trees which had been lately cut down, and the lively party, amused with the novelty of the scene, partook of a social meal under the delightful shade of the spreading foliage.

It was with some reluctance that they prepared to go home, when the servant, who had driven one of the carts, came to inform them that their rustic vehicles were waiting at the end of the lane.

The children had hung their straw hats on the bushes, and it took them some little time to

adjust their different treasures. Each was provided with a basket. Ellen collected her plants, not forgetting the moss and mountain parsley, which had been laid among some fern-leaves in a cool spot; Frederic was busy with the sea-shells which the curly-headed boy had given him, and with a dead kingfisher which Charles had found near the lake; Lucy thought herself rich in the possession of a large quantity of wild cherries; and Clara and Harriet had leaves, flowers, shells, and pebbles, as valuable to them as diamonds and precious stones would have been.

"And now, my little humming-bird," said Harriet's father, as he lifted her into the cart, "a pleasant ride to you!" and Charles and he mounted their horses as the carts turned round the corner of the lane.

The sun was just sinking beneath the horizon, the distant mountains were tinged with its remaining rays, and the trees were tipped with a yellow lustre, when the juvenile party arrived at Belmont Grove.

CHAPTER II.

In the course of a few weeks the whole family returned to their own seat in Devonshire. Some days were employed in making suitable arrangements after so long an absence; in visiting the friends who welcomed their arrival at home, &c. &c.

One morning Ellen went into her mother's dressing-room, and reminded her of her promise respecting the India Cabinet.

Her mother was writing; but when she had heard her little girl's request, she reached a book and put it into her hands, pointing to a seat, and telling her to amuse herself with it till she was ready to attend to her.

Ellen soon placed herself on an ottoman, by the side of her mother, and she found that this book consisted of blank leaves, which had been neatly ruled with red ink into separate divisions, somewhat in the way of a memorandum-book. In each division was a number,—No. 10.—No. 16.—No. 24.—and so on, and in each blank space by each number was written, in black ink, the name of some mineral, spar, shell, &c.

Ellen's mother told her, that every specimen contained in the Cabinet was ticketed and numbered in the same manner, so as to correspond.

This plan was, as Ellen said, very convenient, because you might find the name of any thing at once, without referring at the time to other books ;—you might do that afterwards.

"What shall I look for first, mamma?" exclaimed the delighted girl, as she turned over the pages.—"The nautilus, No. 3—the 'paper nautilus,' mamma. No. 15—ashes—'volcanic ashes thrown up from Mount Vesuvius, and which fell on a vessel between twenty and thirty miles from the mountain.' Oh, mamma! do you hear that? How could ashes be thrown thirty miles—do you believe it, mamma?"

"I will tell you when I am at liberty, my love: I wish you to amuse yourself whilst I am finishing my letter."

Ellen ceased to ask questions immediately; for she always wished to please her kind and indulgent mother, and was willing to restrain her own inclination, whenever she desired it. This endeavour to promote the pleasure and lessen

the trouble of others, caused her to be beloved, and so it will every little girl.

Ellen continued to look over this entertaining book, and she read, 'Labrador spar,' spar from Labrador, I suppose,—'Coral from the Red Sea' —the Red Sea is between Africa and Asia,—'Iron ore, from the island of Elba,' near Corsica,'— "Corsica! Corsica! Indeed I cannot tell where Corsica is!" Ellen knew that her mother would answer her if she asked, but she was determined not to do so, because her mother had told her that she was engaged. However, several maps on rollers were hanging up in the next room: there went Ellen; and after searching a little time in the map of Europe, she found Corsica, a large island in the Mediterranean Sea, to the south of Genoa, in Italy. This was much better than having been told.

When Ellen returned to the dressing-room, her mother was folding up her letter.

"Now may I talk to you, dear mamma?" exclaimed she. "Now, can you attend to me? —now can you tell me what mundic, antimony, and cinnabar, are, mamma?—where cocoa nuts, hiccory-nuts, and betle-nuts, come from? and—

oh, mamma! here is my favourite humming-bird at last! 'No. 93, a humming-bird from Peru, with nest and eggs!'"

Ellen's cheeks glowed with delight, and her eyes sparkled with joy, when her mother unlocked the folding doors of the India Cabinet, and displayed before her admiring daughter three shelves, containing a choice collection of Nature's ever varying productions, nicely arranged.

Suspended from a red coralline appeared the little nest, which Ellen had had the patience to wait a whole month to see, without even expressing a wish for the time to pass more swiftly than it did: a month is a long period at Ellen's time of life.

Now she was well repaid. The humming-bird itself was placed over the nest. The feathers on its wings and tail were black; but those on its body and under its wings were of a greenish brown, with a fine red cast or gloss, which neither silk nor velvet could imitate. It had a small crest on its head, green at the bottom, and, as it were, gilded at the top, and which sparkled in the sun like a little star in the

middle of its forehead. Its little black eyes appeared like two shining points, and its bill was black, straight, slender, and about the length of a small pin.

The nest and eggs exactly agreed with Isaline's description.

"And do these charming little creatures sing, mamma?" asked Ellen.

"No, my love: the rapid motion of their wings brings out a humming sound, from whence they have their name; for whatever divides the air swiftly must produce a murmur. I have sometimes told you that Nature divides her favours. Besides, it is with birds nearly as it is with us; talent and genius are commonly found under a modest garb; so we must not set too much value on external beauties."

Ellen's attention was taken from the humming-bird, by the appearance of what she called little branches of red sealing wax: "But yet it must be *coral*," said she; "for it is so much like *the coral* Harriet wore round her neck when she was a baby. What is coral, mamma? 'No 58, coral from the Red Sea'—that is all the book says about it, dear mamma."

"Every substance known on earth is divided into three classes, or *kingdoms*, as they are called," said her mother; "mineral, vegetable, and animal. The mineral kingdom contains such things as have neither life nor feeling, as stones and metals: the vegetable kingdom comprehends such things as have life without feeling, as flowers, trees, shrubs, herbs, and grass: and the animal kingdom comprises every creature that has life and feeling."

"Then you, and I, and the humming-bird, all belong to *it*!" exclaimed Ellen.

"We do indeed," continued her mother; "as well as every beast, bird, fish, and insect, upon the globe. Coral is generally found fastened to rocks. For many years people believed it to belong to the vegetable kingdom, but within the last hundred years they believe it to be produced by an insect. It has been discovered, that there are innumerable small cells in coral, which are inhabited by these insects; and it is supposed that the insects make these cells.

"The corals rise to such heights in some seas, as to create islands inhabited by men, The Friendly Islands, in the Pacific Ocean,

were thus raised by corals from the depth of that sea, and ships have often been lost on coral rocks."

"But, mamma, this coral of your's came from the Red Sea. In what manner was it procured? And how was it known that there was coral in that sea?"

"The eye can reach but a very short way into the depth of the ocean, my love, and that only when its surface is glassy and serene. In many seas, nothing is to be perceived but a bright sandy plain at bottom, extending for many hundred miles, without any interruption. But in others, particularly in the Red Sea, it is quite different; the whole body of this extensive bed of water is, literally speaking, a forest of sub-marine plants and corals. Here are also seen madrepores, sponges formed from the juice deposited by the worm that inhabits them, sea mushrooms, mosses, and other marine productions.

"In the spring, seven or eight men, whose business it is to procure coral, go in a boat. One of them throws a curious net, which is made of two pieces of wood and a leaden

weight; a great quantity of hemp and strong cords are twisted securely about these beams of wood. The net is then let down into the sea; and when the coral is torn from the rocks and entangled in it, they draw it out by a rope, which is sometimes very hard work, and requires a great deal of strength."

"And here, mamma," said Ellen, "is a large piece of delicate white coral—I will not call it *trees of sealing-wax* any more—where did it come from?"

"White coral is found principally on the shores of Ceylon," replied her mother; "a large mountainous island in the Indian Ocean, near Cape Comorin."

"Yes, mamma. I know where Ceylon is—I recollect Isaline once told me that the cinnamon tree grows there; and in "Evenings at Home," *Indur* became an elephant in the verdant woods of Ceylon."

"The white coral," continued Ellen's mother, "lies in vast banks, which are uncovered at low water; and it is porous"—

"Somewhat like sponge, then, mamma?"

"Yes: while young, it is formed upright,

like little shrubs, and is then firm and solid, with a smooth outside; but little branches continually shoot out, and from those new branches spring others, till the whole becomes one confused bush of coral."

"Thank you, dear mamma!" said Ellen, "I like this account of coral very much. What shall I ask you about next?"

"Butterflies! those beautiful butterflies, placed upon that branch of sea-weed! Where did they come from, mamma?"

"One is called the yellow butterfly of Brazil, in South America: the other is the blue butterfly of China. Nature has clothed them in beauty. But here is a moth in a much plainer garb, which is a thousand times more valuable than all the brilliant butterflies of China and Brazil."

"Why is that dull-looking, drab-coloured moth so valuable, mamma?"

"Because its egg produces a little caterpillar, to whose industry we owe one of the most beautiful materials we have for clothing."

"Oh, the silkworm, mamma! the silkworm! Isaline had silkworms once; but I had forgotten the moth."

"All the warm countries of the south of Europe and Asia," continued her mother, "have groves of mulberry-trees, the leaves of which trees being the food of this useful little insect, preserve and propagate it. The worm is hatched by the heat of the sun, from eggs laid by the moth. When it has attained its full growth, it winds itself in its web, attached to a leaf or a twig, and in this silken cradle is converted into a chrysalis. And what then?"

"In a few days the chrysalis produces the moth, mamma—the *drab-coloured* moth, which lays eggs for other silkworms, flutters and dies. What a curious and wonderful insect!"

"The webs, after slight preparations, are spun into thread, by machinery in silk-mills, and then called *organzine* or *thrown* silk; and the weaver converts the thread into various elegant fabrics.

"I have heard that stockings have been actually made of the web of the *spider*. Whatever man can possibly spin into thread, he contrives to weave into garments; and there is no bound to his materials, but in Nature."

"And indeed, mamma," exclaimed the little Ellen, "I think there is no bound, as you say, to Nature's productions."

"Well," said her mother, "what takes your attention next?"

"That large ivory-ball, mamma!"

"That is the egg of the ostrich — a very large bird which inhabits many solitary parts of Africa, as well as the large sandy deserts of Arabia."

"A bird's *egg*, mamma! Is it possible? Why it is the size of Clara's head?"

"The ostrich is considered as the largest of birds; but its size deprives it of the power of flying—its weight is too great."—

"Oh, I remember now, mamma, having read in one of my little books, that if the ostrich were standing in the parlour, and stretching its long neck, its head would almost touch the ceiling; and that it can run very fast, indeed, faster than a horse can gallop; and that it spreads out its wings before the wind, which blows it, the ostrich, along, as it does the sails of a ship; but I do not think that my little book said any thing about its eggs; and that—"

"Why so many *and thats*, my love?" said her mother: "cannot you tell your tale without *and that?* Habits are more easily acquired than lost; and I should be sorry for my little girl to

be unable to repeat any thing she had heard, because she was afraid of saying *and that.*"

Ellen tried again, and conquered the difficulty.

"The beautiful feathers that grow on the wings of the ostrich," continued her mother, "are slender and loosely put together, and their beards are long silky threads, separate from each other, so that they are incapable of making a body sufficiently close and compact to strike the air with the force required in flying; but, as you say, they answer the purpose of sails, and are of admirable use to it when pursued by the Arabs on their swift horses."

"Ah, mamma! the poor Arabs of the sandy deserts undergo a great deal of trouble to procure our beautiful plumes of ostrich feathers!"

"Now, Ellen, I must close the cabinet for today. It is time for you to walk out."

"Stay one moment, dear mamma! Do just tell me what these long sharp quills are, mottled with black and white?"

"They are the quills of an animal called the porcupine, a native of India, Persia, and all parts of Africa. The Indians, who are fond of

finery, use them to adorn the many curious articles they make, some of which surpass ours in neatness and elegance; for this purpose they dye them of various and beautiful colours, and split them into slips, with which they embroider their baskets, belts, and other ornaments. I have many in one of the drawers, which you shall see another day." And as Ellen's mother spoke, she turned the key of the India Cabinet.

The affectionate girl kissed her mother, reached her straw hat, and ran after Isaline, who was gathering roses from a damask rose tree on the lawn.

CHAPTER III.

ELLEN took a basket, that she also might gather roses; and during the time that she stood by her sister, she tried to give her an account of all she had seen and heard, and ended by saying, that her mother had promised to show her some belts and baskets made by the Indians, and embroidered "(because they like smart things), with black and white quills. I

should not like my frock or sash to be adorned with those sharp-pointed porcupine quills."

"But you have not seen my favourite drawer," said Isaline.

"Which is that?—which is that?" cried Ellen.

"The drawer of shells:—shells constitute an extensive part of natural history; and for elegance of form, variety and beauty of colours, as well as delicacy of texture, excel the finest works of art."

"Next time I go into mamma's dressing-room, I will beg her to let me look at them?" exclaimed Ellen. "The study of plants is called Botany,—what is the study of shells called?"

"*Conchology*. There are more than a thousand species of shells; and they are separated into three classes or divisions, as plants are into twenty-four classes."

"Will you tell me their names?" said Ellen.

"Univalves, bivalves, and multivalves. Shells are also subdivided into many genera and species: you will be better able to understand their distinctions, when you have examined my favourite drawer. The first class contains those

that are of one single piece, as a snail shell; the second consists of those formed of two shells, connected by a hinge, as the oyster; and the third of those which have more pieces than two."

"All this will be very easy to remember," said Ellen. "I hope we shall go to the sea-side next autumn, that we may ramble among the rocks, and seek for shells ourselves."

"Yes," said Isaline, "I hope that we shall; for any thing gained by our own industry is doubly valuable."

"When mamma was talking to me about coral," said Ellen, "she said it was supposed to be a vegetable by the people who lived many hundred years ago, and that it is now discovered to be the work of little insects; but she did not tell me whether it belonged to the animal or vegetable kingdom."

"It belongs to the *zoophytes*," returned Isaline—"an intermediate class, partaking both of the nature of an animal and a vegetable—or animals resembling flowers, and springing from a vegetable stem."

"I am glad there is such a class," said Ellen;

" for corals, and sponge, and corallines, may all be placed in it: I did not know where to put them before. Will you tell me what else it contains ?"

" When we were at Weymouth," replied Isaline, " we found a zoophyte, called the sea-anemone. Its claws and tentacula were extended and disposed into regular circles, and tinged with a variety of bright lively colours, very much like the petals of some elegantly fringed, and what are called radiated flowers, as the carnation or anemone, to which it bears so strong a resemblance, that papa says some naturalists have supposed it to be a vegetable. These zoophytes, firmly fixed to the rocks, have a mouth formed by their beautiful rays, which they possess the power of dilating or opening, and thus inclosing their prey in a net, as it were."

" Oh, how curious !" said Ellen.

" Several insects of the *mantis* genus (for the zoophytes are divided into fifteen orders)," continued Isaline, " are so similar to a cluster of leaves, in their form and colour, that they are called by the sailors who find then in the woods, walking leaves.

"The *polype* ranks as the first of plants and the last of animals; for some naturalists affirm that its propagation may be increased by cuttings, as plants are by slips and suckers. It is of a snail or jelly-like substance. It shrinks into a round green spot if disturbed; but in its natural form it is a long tube, and has a head and mouth, from which eight or ten long arms are projected, to seize worms and other insects."

"Zoophytes are a very convenient class," said Ellen: "I shall not be puzzled another time to find out what those substances are, which are half-animal and half-vegetable."

Ellen's attention was taken from this subject by the appearance of the little ones, who were returning from a walk.

"We have been through the village," exclaimed Frederic, running towards his sisters, "and round by the farm-house on the hill, and so home through the meadows by the river-side."

"And here is a fine yellow flag-flower for you, dear Isaline!" cried Harriet—"It grew by the brook in papa's field, and Frederic and I put large stones across the brook, and gathered

it, and brought it home for you to copy;—and here is a wild dog-rose, and a sprig of honey-suckle, and a great many more *beauties!*"

"Thank you, my little humming-bird," said her sister; "you seem to have flown with some rapidity from flower to flower! We will go home together; and you, Ellen, shall copy this yellow water iris."

As Isaline spoke, she took hold of Lucy's hand; and giving little Clara her basket of roses, the cheerful party crossed the lawn.

Every time that Ellen passed the door of her mother's dressing-room, she would peep in, just, as she said, to catch a glimpse of the India Cabinet; for since Isaline had told her about the shells, her desire to see them had not a little increased. It happened one morning, as Ellen was taking her accustomed peep, that her mother, who was in the room, called her, and told her that she might, if she pleased, once more look at the India Cabinet.

"Thank you, dear mamma!" said Ellen. "The shells—the drawer of shells this time, because shells are Isaline's favourites, and per-

haps they may become my favourites too, mamma."

Her mother then unlocked the folding-doors. Below the three shelves were six drawers; one of these drawers she opened, and Ellen, with an exclamation of delight, pointed to a large white shell, somewhat resembling the shape of a snail shell, and about eight inches across, and she read on the sheet of writing-paper upon which this shell was laid—

"Learn of the little *Nautilus* to sail,
Spread the thin oar, and catch the driving gale."

"The name of *nautilus*," said her mother, is derived from a Greek word, signifying both a fish and a sailor. It is supposed that men first took the idea of sailing in vessels from what they observed practised by the little inhabitant of this shell."

"But where is the little inhabitant, mamma—the thin oar—and the sails?—I do not see them."

"Take hold of the shell, my love."

"It looks as though it were made of thin white paper, mamma—like the silver paper which Isaline puts over her drawings."

Ellen held the shell up to the light, and she could see that it was divided into a number of partitions, or separate cells: there were about forty, which formed a spiral line; and there was a hole in each cell, large enough for a pencil to pass through.

"The oars and sails belong to the fish itself, Ellen," said her mother, "and not to the shell. The nautilus has eight arms or legs. When it intends to sail, it extends two of its arms on high above the water, and supports a membrane between them, which it throws out to serve as a sail; sometimes it sets up and spreads six of these little sails at once; while the two other arms hang out of the shell, to be used as oars, and with these it rows itself on in the water. When the sea is calm, numbers of these fish are often seen diverting themselves with sailing about in this manner, to catch the driving gale."

"Pretty little creatures!" exclaimed Ellen. "I wish I could see them, mamma, with all their sails up, sailing away!"

"As soon as a storm arises," continued her mother, "or any thing alarms them, they in-

stantly furl their sails, pull their oars into the shell, and take in as much water as makes them a little heavier than the sea-water in which they swim, and by that means sink to the bottom."

"How wonderful and how clever!" said the astonished Ellen; "but, mamma, how do they contrive to rise again?"

"They expel or push out this abundant water through a number of holes which they have in their arms; and the air in the cells, being lighter than the water around it, they can rise again and come to the surface of the sea when they please."

"How happy the little nautilus must be, mamma, guiding his elegant boat, furling and unfurling his sails, using his oars, and rowing away over the wide sea!"

Ellen was next amused with a shell, somewhat resembling that of the muscle, called the *pinna marina*, to which a little tuft or tassel of fine silk was sticking. Her mother told her that the animal has the power of spinning these threads, as the silkworm does, and that this silky substance is sometimes manufactured into gloves and stockings. Ellen then looked at

the limpets—shells in the form of little pointed cones, and which are found sticking very firmly to rocks, chiefly on the English coast: at the gylindri—a brown shell, with a thick border which turns over into a ledge on the back, like that of the helmet shell: at some rare and beautiful volutes: at the lucina, which is found on the shores of Botany Bay: and at the different species of cochlea, some of which being long and slender, resemble turbans. At length her eye caught some little white shells called cowries, which her mother told her are used by the natives of Africa as money, and that the women in that country ornament their hair with them, and make them into necklaces and bracelets.

"And now, my little Ellen," continued she, "it is time for you to begin your lessons. Clara will be beforehand with you."

Ellen begged that her mother would just open a little white paper packet which was lying in one corner of the lowest shelf.

"For I think, mamma," said she, "that it must be the volcanic ashes, because it is marked No. 15.—Yes: it is," continued she, looking

at the book—'No. 15, volcanic ashes thrown up from Mount Vesuvius.'"

To gratify her little daughter, the kind mother opened the paper.

"What black, dirty-looking dust, mamma! Is that all?" said Ellen, in a tone of disappointment.

"What more did you expect, my dear—*ashes*, you know, are generally of this colour."

"But I thought they were something very curious."

"I will give you an account of Mount Vesuvius in the evening, my love, which I hope you will think sufficiently interesting to compensate for the disappointment you seem to have experienced."

The evening came. Ellen, seated at a table by the side of Isaline, was trying to copy the yellow Iris; Frederic was drawing a picture of the fisherman's hut in Westmoreland; Clara, Lucy, and Harriet, were quietly amusing themselves on the carpet; when the former with wishful eyes looked towards her mother.

"Is mamma to read your eyes, Ellen?" said Isaline. Ellen smiled. "You know what I mean,

mamma," said she. "Now we are so nicely settled, and so comfortable, will you, as you promised to do, tell us something about Mount Vesuvius?—In the first place, where is it?—and what is it?"

"It is a celebrated burning or *volcanic* mountain, to the south of Italy. It generally happens in the course of a few years, that what is called an eruption takes place; streams of liquid fire issue from the crater, or hollow summit of the mountain, and flowing down its sides, overwhelm and destroy the beautiful country through which they pass; showers of ashes and red-hot stones are thrown at the same time to a prodigious height, and a loud rumbling sound is heard within—vivid flashes of fire are seen, and the whole country becomes a scene of ruin and confusion."

"Is Italy a pleasant country, mamma?" said Frederic.

"Yes, my love; particularly so. Its soft sloping hills and verdant meadows are covered with flowering shrubs. Tufts of aloes, orange, and citron trees are interspersed with mulberry-groves, in which thousands of silk-worms spin

their golden webs—white cottages are scattered amidst bowers of aromatic shrubs and evergreens, which scent the air with their fragrance—shepherd girls are seen dancing on the hills, and children engaged in collecting oranges, or gathering flowers;—the sky is almost always blue, without a cloud,—the weather almost always delightful. In the midst of this scene of tranquillity and happiness, an eruption sometimes takes place, and destroys the labour of many years."

"How much better are we off, mamma!" exclaimed Ellen; "we have nothing to fear from dreadful volcanoes."

"An eruption of a volcanic mountain is so grand a phenomenon of nature," said her mother, "that I think you will like to hear an account of one, which Isaline will be kind enough to translate for your amusement."

"Oh, yes, mamma! yes, mamma!" re-echoed from many little voices.

"But *translate!*" said Ellen. "Then what language is it written in, mamma?"

"It is written by a French gentleman, my love, who happened to be in Naples at the time of an eruption of Mount Vesuvius."

"How far is Vesuvius from Naples? and what is the name of the gentleman?"

"Naples is only seven miles from the volcanic mountain; and the gentleman is called *Monsieur C——*. I cannot tell you his real name. Now, Isaline, begin, my dear."

(Isaline reads.)

"Early in the spring, I was about to leave Naples, in order to go to Rome. I had just returned to the hotel where I lodged, about eleven o'clock at night, when the people of the house came into my room to inform me that Vesuvius was beginning to throw up clouds of ashes, and that the flames which proceeded from it announced an approaching eruption. The air was as hot as in the month of July, and as calm as on a fine summer's day."

"I think, mamma," exclaimed Frederic, "that if *Monsieur C——* had been wise, he would have set off immediately for Rome."

"He had too much curiosity to do so, my dear. He had long wished to be witness of an eruption, and his wish was now gratified."

(Isaline continues to translate.)

"I immediately went out on a terrace before the house. The air was filled with a shower of ashes. You might feel them falling, but you could not see them. They descended gently and imperceptibly, and gradually covered the surface of the ground. They silenced the noise of the carriages, and covered the whole country around with a dark tint, as if it had been attired in mourning. The darkness was from time to time illumined by the flames, which darted in long flashes from the crater. Suddenly a luminous point appeared on the side of the mountain, about two hundred yards from the summit. It was a new crater, through which the red-hot lava had just forced its way. At the same time a general exclamation burst from thousands of people, 'There is the lava! There is the new crater! It has opened on this side! We are all lost!'

"I went into the city to mingle with the crowd, and share in their alarm and their curiosity. The spectacle was extremely grand; I looked upon it with a mixture of awe and astonishment. Anxiety was depicted in every countenance, and all eyes were turned towards the lu-

minous point, which was visibly enlarging every instant.

"The showers of ashes ceased towards day-break, and the first rays of the morning sun destroyed the brilliance of the flames, which had appeared so vivid during the night. The return of daylight lessened the fears of the people—they retired to their own homes, forgetting that the same grand scene would be renewed the succeeding evening.

"I also retired to rest; for it is only in darkness that the full magnificence of a volcano is displayed, and I was desirous of taking a nearer view of it the following night.

"I set out towards Vesuvius about seven o'clock in the evening, in company with my young friend Louis.—As the day declined, the flames of the volcano resumed their splendour, and, on reaching Portici, we were able to judge of the progress the lava had made during the day. It was no longer a bright luminous point, as on the preceding evening, but a broad stream, flowing slowly along, like a very slow river.

"We took guides at Portici, where we left our carriage, or cabriolet, and mounted mules."

"Mules, mamma! Do you think that the mules upon which Monsieur C—— and Louis rode, were as sure-footed as the mules upon which papa and Charles used to ride up the steep slippery mountains of Westmoreland?"

"No doubt, my love, or they would not have been able to ascend the still more slippery sides of Vesuvius. However, they were obliged to be sent back, as you will hear."

(Isaline translates.)

"We were provided with torches, but we stood in little need of them, for the sky was sufficiently illuminated by the flames. We ascended through vineyards to the hermitage of San Salvador, along a rugged path bestrewn with stones and cinders; but our mules, being accustomed to it, pursued their way without difficulty, and left us at liberty to enjoy the grand and majestic scene around us."

The pencil had fallen from Ellen's hand—the yellow water iris lay beside her quite forgotten—she sat with a countenance full of surprise and astonishment, and her whole attention seemed placed among the ashes and lava of Mount Ve-

suvius. Charles had closed the book he held. Clara, Lucy, and Harriet, who had been building a tower of little boards upon the carpet, came from the other side of the room, and climbed upon Isaline's chair or Charles's knee.

Their kind sister continued reading—

"This little hermitage stood in a cleft: it consisted of two chapels, (one of them was hewn out of the lava from a former eruption), also a little refectory, a kitchen, and a chamber; the furniture was as simple as the habitation; in the latter was a straw bed, two chairs, and a table, with a crucifix on it. The hermit placed before us dates and oranges, brought from the valleys below. Here we sent back our mules to Portici, for they could no longer be of any use to us. Two of the guides alone remained, to direct us to the part of the mountain where the lava had taken its course. Before we set off, we remained for some time on a sort of terrace before the hermitage, contemplating the fiery clouds which the volcano was spreading around it. At length we continued our way towards the torrent of lava, which then threatened the unfortunate town of Torre del Greco."

"Unfortunate! did the lava bury that town then, mamma? Why is it called unfortunate?" said Ellen.

"Torre del Greco escaped during the eruption which *Monsieur C——* describes, my love," replied her mother; "but it was destroyed by another, which took place three years afterwards."

"Don't you think, mamma," said Frederic, "that *Monsieur C——* had a great deal of courage? I admire him now—I wished at first that he had gone to Rome, to be out of the danger. I did not know then that he would venture to go up the mountain."

"I admire him too, my little boy," returned his mother; "although he did not ascend the mountain in the hope of being of any great service to himself, or to any one else, yet it was a laudable motive which induced him to do so. He was a traveller, and had visited the icy mountains of Switzerland, covered with perpetual snow—he was now visiting one covered with burning cinders—he wished to see nature in all her variety of aspects, and for this reason he assumed courage enough to ascend Vesuvius."

During this conversation, Isaline had been called out of the room to a little girl who was come to beg "a few roses and a few slips of myrtle;" with which Isaline supplied her every week throughout the summer. Little Rachel lived with her grandmother, and earned a few pence now and then, by making nosegays of the flowers which grew in their cottage-garden, and, when Isaline's roses and sprigs of myrtle were added, and all nicely arranged in a basket, taking them to sell at a neighbouring town. For Isaline was ever ready to assist the poor; she visited them in their own cottages, carried them food and nourishment with her own hand, and was never so happy as in relieving their wants.

Whilst her sister was absent, Ellen peeped at the book which lay open on the table, and she tried to make out a little of the French.

"I wish," said she, "that I could translate it as fast and as well as Isaline does. Here is something delightful coming, presently, I believe—something about *avec une dame*—with a lady—can that be true, mamma?—No lady could possibly climb this rugged, slippery path,

which even *Monsieur* himself found difficult—and yet it must be so—*elle était une Angloise—elle parla l'Angloise*—an Englishwoman, mamma! an Englishwoman upon Mount Vesuvius! Can you believe it? *Florinda*, mamma! her name was Florinda!—I wish Isaline would come, that we might know who this Florinda was! *Elle étoit jeune et belle, et pâle avec émotion*—oh, mamma! she was young and beautiful, and pale with emotion—I wish Isaline would come!"

"What! Ellen," said her mother, "would you have poor little Rachel lose her flowers, because you wish to hear about a Florinda? Exercise your patience, my child. Remember the patience with which you waited a whole month to see the India Cabinet."

"So I will, mamma—I will exercise my patience—if it were not for little Rachel I should not at all like an interruption of such a delightful story—but it is not a story—it is true—is it not?"

"Quite true, my love."

"Well," said Ellen, looking again at the

book, "here is a word, mamma, of which I cannot tell the meaning,—*scoria*, mamma,—will you be my dictionary?—my own little red-morocco dictionary is up in the library."

"That word is the same in English as in French, my dear," said her mother. "*Scoria*, or *dross*, is that mass which is produced by melting metals and ores; and when cold it is brittle, rough, and uneven, somewhat like broken glass, and of a dark colour. You may suppose that a volcanic mountain is covered with heaps of this scoria—what does *Monsieur C*—— say about it?"

"*L'incendie fit des progrès rapides et*——— oh, Isaline, are you come? Here is the book. *Monsieur C*—— was going towards the torrent of lava."

Ellen resumed her pencil, and Isaline read as follows:—

"The fire made rapid progress, and we proceeded through cinders and scoria, along obstructed paths; they at first led us across a wide valley, which separates the hermitage from the upper part of Vesuvius. This valley, where neither grass, tree, nor shrub, was to be seen,

extended along the side of the mountain opposite to the eruption. It was dark and still, except that a lurid light was reflected upon it from the clouds. It was the vale of death, and eternal silence; but on this night its tranquillity was broken by the numerous parties whom curiosity had brought thither, and who were going and coming from the little hermitage to the crater.

"After marching for an hour, we began to climb with difficulty over heaps of scoria. We were obliged to grope our way through passages unknown to the guides, for at each eruption the lava alters its course. We soon found ourselves in a region where every thing bore the marks of fire. The air began to be scorching; the very stones were warm; and we beheld fiery clouds rolling over our heads, and leaving a tract of awful red in the sky."

"Indeed, mamma!" said Clara; "I should not like to have been in *Monsieur C——'s* place. How different is Vesuvius to the mountains we used to climb in Cumberland!"

"Hush!" said Ellen, "we are just come to Florinda!"

(Isaline continues.)

"We were within half a mile of the end of our journey, when, to our astonishment, we met with a lady, attended by two guides, who had been left behind on the mountain by her party. She was sitting on a rock, wrapped in a shawl, and was talking with great earnestness to her guides. By her accent I was convinced that she was an Englishwoman, and I went up to her to offer her my assistance, and to ask her the cause of her agitation. She replied in French, with an eloquence inspired by the darkness and solemnity of the surrounding scene. She informed me that her husband and a party of friends had accompanied her as far as this place, but that the guides had persuaded him that it would be dangerous for her to proceed any farther. She had made many entreaties to be allowed to go on, but ineffectually; and had since used her best endeavours to prevail on her guides to take her forward, but without success. She was mortified, she said, to the last degree, at being thus prevented from witnessing a scene to which she had looked forward with so much earnestness.

"I ventured to offer her the assistance of my arm, for the short distance which remained. She accepted it with a readiness, arising merely from her anxious desire of being present at the magnificent spectacle displayed by Vesuvius; and we set off, notwithstanding the remonstrances of her guides.

"She leaned on my arm, and we proceeded slowly, because we sunk into the ashes, and the scoria wounded her tender feet. Nevertheless, we were drawing nearer the torrent of lava, and the glare which it produced gave me an opportunity of observing my courageous companion."

"I scarcely like Florinda, mamma," said Ellen; "she had almost too much courage for a woman,—especially an Englishwoman!"

"You do not know, my dear, but what her motive was as laudable and as good as *Monsieur C——'s*. Go on, Isaline."

"She was young and beautiful, but pale with emotion, and seemed to share in the agitation and disorder of the scene.

"The ground and the air became hot as we drew nearer the mouth of the volcano, and gusts

of smoke came rolling towards us. We endeavoured to avoid them, by getting out of the current of the wind; but the blast was so violent, that we were twice enveloped in these fiery clouds, and were near being suffocated. The soil gave way under our feet, and the fire appeared beneath the scoria, as it rolled down the precipices.

"At length, with some difficulty, we reached the end of our journey. The friends of my young female companion were already arrived, but their attention was so fully engaged by the sublimity of the objects around them, that they had not perceived our approach. We were therefore obliged to introduce ourselves to them, and I was not without some uneasiness as to the reception we might meet with; but success ensured our welcome. We had proceeded safely thither; our imprudence was forgiven; — we had only to enjoy in silence the grand scene before us.

"The lady's husband called her Florinda; the only name by which I have ever known her. Should she read these letters, she will recollect this nocturnal scene upon the mountain,

and know who the stranger was that conducted her to that ocean of fire.

" We gazed in silence upon the burning torrent, as it rolled its waves before us. The red-hot liquid lava flowed over a high rock into a valley, and continued to flow, increasing in breadth, because, as it went on, it re-kindled the old scoria, so that the whole mountain seemed on fire.

" The stream of lava, which was now some hundred feet broad, was gradually approaching the brink of another precipice, down which it threatened to fall before morning, and we determined to await the event. It kept slowly, but continually, drawing nearer; the scoria taking fire before it, and preparing its way. At length the ignited torrent reached the edge of the rocks, and precipitated itself down them with a dreadful and tremendous noise. Clouds of smoke arose from the abyss, and were driven by the wind in all directions, while the lava continued to fall into the gulf.

* * * * * *

"The dawn now appeared in the horizon; the

sun darted his morning beams; and the splendour of the night faded and disappeared before the radiance of day. The fire grew pale; the vapours became white; and there remained nothing but the singular appearance of a mountain moving by its own efforts. It was time to retire, for the presence of the ignited matter, when veiled by the sun, is highly dangerous: the spectator may be consumed before he is aware of its approach.

"We therefore returned by the same course to the little hermitage of San Salvador, where the venerable father again regaled us with pomegranates, grapes, and oranges. Thence we proceeded to the town of Portici, where our cabriolets were waiting for us. Here I bade adieu to the young and lovely Florinda, whom I have never since seen."

"And here," continued Isaline, as she closed the volume, we must bid adieu to *Monsieur C——*."

"What an interesting account, mamma!" said Charles: "I should like to have been Louis; I should not have feared any danger when under the protection of his friend. I wish he had

known what became of Florinda. Where do you think she is now, mamma?"

"That I cannot tell,—I think *Monsieur C*—— evinced kindness as well as courage, in procuring for her the gratification she so much desired."

"Indeed he did, mamma! We are much obliged to dear Isaline for having entertained us so nicely."

"Will you read something more?" said Lucy.

"Not this evening, my love, because it is time for you to go to bed."

"Another evening, perhaps," said Ellen. "If it had not been for the India Cabinet, we should not have heard of *Monsieur C*——. If it had not been for the little wren that built its nest in our grotto, we should not have thought of the India Cabinet!"

CHAPTER IV.

A FEW days after the conversation about Mount Vesuvius, Ellen and her little sisters were rambling in a copse in search of wild

strawberries. It was a delightful evening; the sun illumined the western hills, and the trees were tinged with a yellow lustre. Devonshire is a fine county. Chequered with villages, whose towers and spires peep above the trees in which they are embosomed; its soft sloping valleys are fringed with wood, and the wide tracts of champaign country are chiefly employed in arable land. Some fields were now waving with yellow corn, whilst in others the busy labourers were employed in carrying away the products of the harvest.

As the children were bending towards home, they were overtaken by Isaline, who was returning from the cottage of Rachel's grandmother.

They held their baskets in triumph to their sister, and begged her to partake of their strawberries.

The little humming-bird had flown from the rest, but she now reached them, loaded with horse-chesnuts, with which the path was thickly strewed.

"Do you think, Isaline," exclaimed she, "that if I were to plant these chesnuts in my garden, they would produce chesnut-trees?"

"You may try the experiment, my good friend. The acorns your brother planted last year, are now become little oak-trees; and this time next year you may have little chesnut-trees from your chesnuts."

"How wonderful it is, that from so small a kernel such large trees can be produced!"

"Fruits, which afford us so many luxuries," continued Isaline, turning to Ellen, "are in fact nothing more than the covering, or natural production, which protects the seed of plants, and are called by botanists *pericarps*. Some pericarps are pulpy, as peaches, nectarines, and apples."

"Then the seed or kernel is contained in the middle—in the middle of the *pericarp*," said Ellen.

"Yes, my love; and some are enclosed in a hard pericarp, as nuts; some scaly, as the cones of fir-trees."

"How astonishing is the variety of the productions of Nature—

'No tree in all the grove but has its charms,
Though each its hue peculiar; paler some,
And of a wannish grey; the willow such,

And poplar, that with silver lines his leaf;
And ash, far stretching his umbrageous arm.
Of deeper green the elm; and deeper still,
Lord of the woods, the long-surviving oak.
Some glossy-leaved, and shining in the sun;
The maple, and the beech, of oily nuts
Prolific; and the lime, at dewy eve
Diffusing odours: nor unnoticed pass
The sycamore, capricious in attire,
Now green, now tawny, and, ere autumn yet
Have changed the woods, in scarlet honours bright.'

"I like that," said Ellen, "because I understand it, and I like any poetry that I *can* understand. Will you repeat the line about the poplar?"

"And poplar, that with silver lines his leaf."

"What does it mean by the leaf being lined with silver?" said Ellen.

"The white poplar grows in woods and hedgerows, and is very conspicuous from the whiteness of its foliage,—hence Cowper calls it silvery.

"Have you yet seen the drawer of nuts from different countries?"

"What! in mamma's Cabinet! Is there one?" said Ellen.

"Yes," replied her sister: "and it contains seeds or pods from many of the most curious trees in the world."

"Let us hasten home, and perhaps we shall have time to examine this interesting drawer! exclaimed Ellen.

The juvenile party soon ascended the hall steps. Harriet and Clara chose to find Charles, and ask his opinion about planting their chesnuts; Lucy begged to accompany Ellen into the dressing-room.

Isaline opened the doors of the India Cabinet, and the drawer next to the drawer of shells.

"Are these the foreign nuts?" exclaimed Ellen. "They are not so pretty as I had expected; however, if you will give us an account of the different trees that produce them, it will amuse us as much as looking at them.

"In the first place, what is this, about the size of a walnut, and whose outside is entirely black? It is half open, and full—quite full of a beautiful white down, as soft as velvet."

"This is what is called cotton," said Isaline. "By means of a mill, this down is separated from the husk, and it is then spun, and made

into various beautiful articles. Your muslin frock is made of it."

"Indeed! is my frock produced—really produced from the down contained in little pods like this! What sort of tree is the cotton-tree, and where does it grow?"

"There are three species of cotton-tree: one creeps on the earth, like a cucumber; the second is thick, like a bushy dwarf tree; and the third is as tall as the oak. All three, after having produced very beautiful flowers, are loaded with a fruit like that in your hand. The cotton of the plant that creeps on the ground is reckoned the best. It grows in the East-Indies, in America, and particularly near Smyrna, a seaport of Turkey in Asia, and one of the largest and richest cities in that part of the world.

"Who would suppose that our draperies of snowy white were manufactured from the down contained in these little pods!—and who that does know it, but can adore the wisdom that has so admirably adapted every thing to our use, and so wonderfully provided for us all we can desire!"

"I see," said Ellen, after a pause, "that this drawer contains little pieces of wood, or bark, as well as nuts."

"Yes," returned Isaline, taking hold of a specimen. "This is the bark of the quinquina tree, which grows in South America. It is highly esteemed in all parts of the world, where it is known, for its medicinal virtues."

"I know the taste well, said Ellen, "and so do you, Lucy. I wonder how any one could think that the bark of a tree would answer the purpose of a medicine."

"I have heard," said her sister, "that the virtues of the Peruvian bark were first discovered by a poor negro, who in the hot fit of an intermittent fever drank largely of the water of a pool into which some of the quinquina trees had accidentally fallen, from the earth giving way around the pond."

"Then, I suppose," said Ellen, "that the negro observed that *that* water did him more good than any other."

"Yes," said Isaline, "he did. This anecdote shews us we ought not to suffer any thing to escape our notice, and that the most trivial

incident may furnish important knowledge, or be applied to some useful purpose.

"Here is some cloth made from the Chinese or paper mulberry-tree."

"Why is it called the paper mulberry?" asked Ellen.

"Because the Chinese make paper of it. And the inhabitants of Otaheite make cloth, like this, of its bark," replied Isaline.

"What! is this piece of strong beautiful cloth actually made of the bark of a tree? I should like to know how they manage to change bark into cloth."

"They take the stalks or trunk of the paper mulberry, which seldom grow very high, and are only about the thickness of your arm. They strip the bark, roll it up, and soften it in water: it is afterwards beaten with a kind of mallet, and spread out to dry. When quite dry, these fibrous pieces are joined together by the glutinous or gummy juice of a berry, called *tooö*."

"Where is Otaheite, sister?"

"I think I must answer you as Sir William Jones's mother is said to have answered his questions, when he was a little boy: '*read, and you will know.*'

"You may beg papa to lend you Captain Cook's Voyages, and I will select passages for your amusement. Otaheite is one of the Society Islands in the South Pacific Ocean. It is almost covered with woods and forests, consisting of bread-fruit trees, palms, cocoa-nut trees, plantains, mulberries, sugar-canes, and many other beautiful shrubs and trees. The houses of the natives consist only of a roof, thatched with the long prickly leaves of the palm-nut tree, and supported by a few pillars of the bread-fruit tree. As a roof is sufficient to shelter the natives from rain and nightly dew, and as the climate of this delightful island is warm and sultry, the houses have seldom any walls, but are open on all sides, and various little birds sing among the evergreen shrubs, which form, as it were, a fence around them."

"I will ask papa this very evening to lend me Cook's Voyages," said Ellen.

"Voyages and travels are a kind of reading particularly agreeable and useful," said Isaline. "Truth gives them their beauty."

"By referring to maps as you read you may obtain ideas of geography, and of the situation of countries, much more correctly than from

systems or lessons learned by heart, and thus procure an extensive and various knowledge of natural history—of facts, *not* fiction—which you may find of use every day of your life. For instance: in reading the account of the South Sea Islanders, we are led to compare their ingenious yet simple works, with the elegance and utility of the manufactures of the more polished nations of Europe and Asia, and are thus enabled to form an idea of the difference between the rough productions of the uncultivated mind, and those which are the result of science and art."

"Paper is sometimes made of rushes also; is it not?" asked Ellen.

"Yes, my dear. The rice paper, upon which I was painting this morning, was made of the pith or soft inner substance of the rush. The Egyptians used to write all their books upon paper made of a sort of rushes—but not little rushes like those which grow by the brook, at the bottom of the park.

"The stem of the *papyrus*, or paper-rush, consists of thin leaves, laid, as it were, one over the other. It was of these, when unfolded, that they made their paper. They separated the leaves

which embraced each other around the stem; flattened them, and then put one over the other, cross-wise—so that one leaf lay breadth-wise, and the other length-wise."

"I understand," said Ellen; "the leaves were woven, somewhat like the matting on the seats in the hermitage."

"Yes: and the Egyptians stuck them together with the muddy water of the Nile, pressed them with very heavy weights, and polished them by rubbing them with a smooth stone."

"Why do you say, *muddy* water?—is the water of the Nile particularly muddy?"

"There is very little rain in Egypt, the sky is seldom cloudy; but in the place of rain the ground is watered by the river Nile, which overflows its banks at a certain season of the year, and carries with its waters a rich mud—it was this mud that the people used in making their paper."

"And do you think," said Ellen, that with all their muddy water—their flattening—their pressing—their polishing and rubbing, they could make nice white writing paper, like ours?"

"No: but it was better than none, and it shews the ingenuity of the Egyptians."

"What is this kidney-shaped nut?" said Ellen.

"It is the cashew-nut," replied her sister; "between the kernel and the shell is lodged a thick inflammable liquor, of such a caustic or hot nature, that if you were to put it to your lips blisters would immediately follow. The tree which produces it grows in the West Indies.

"Here is a specimen of the wood of the camphor-tree."

"What! does camphor, like that lump of camphor in mamma's little tumbler, come from a tree?"

"It does indeed, Ellen. From a wide-spreading tree, nearly as large as our oak, which grows chiefly in the island of Sumatra. The camphor is found in the crevices of the wood. The trees, when cut down, are divided, cut into little blocks, and these are split with wedges into smaller pieces, from the pores or interstices of which the camphor is extracted."

"How curious!" said Ellen. "But will you tell me where Sumatra is? Is it not one of the range of islands in the Indian Ocean, called the East Indies?"

"Yes: it is in the Indian Ocean, and the most westerly of the Sunda Isles. A chain of high mountains runs through its whole extent. Between these ridges are extensive plains, but the hills are covered with woods of perpetual verdure. The forests present many wild and beautiful scenes; and romantic cascades, whitening with foam, dash down the sides of the mountains. Numerous curious shells and fossils are found on the sea-shore, which is defended from the swelling waves by a reef of coral rock—a natural fortification."

"Formed," exclaimed Ellen, "by the labour of millions and millions of minute insects!"

"Nature," continued Isaline, "has favoured this island with many rich gifts. Rice is the principal food of the natives. Here is a stalk of it."

"What! is this delicate grain, rice? it is very much like an ear of wheat, only more elegant. I suppose it is used by the natives of Sumatra, instead of corn?"

"Yes, my dear. And here again we may admire the productions of Nature. There is scarcely any land upon which some kind of corn

cannot grow. It is formed for any situation, either in the most sultry or in the coldest climate. Some is suited to the wet parts of hot countries, as the Asiatic rice, which grows abundantly in the mud of the Ganges; and the maize, or Indian corn, in New England and many parts of America. In our own favoured island, wheat grows best in dry land; buckwheat on rainy hills; oats, in moist places; rye, in sand; and barley on rocks.

"Corn is sufficient for all the wants of man. Can you tell me some of the purposes to which it is applied?"

"Straw," replied Ellen, "is used for covering cottages, and serves as food for cattle; and with the grain or seed our food and drink are made."

"The forests in Sumatra," said Isaline, "are composed of a great variety of noble trees. The shrubby-stalked ebony tree—"

"Mamma says that the black legs of my little stool are made of ebony," exclaimed Lucy.

"They are, my love; but it is now in less use amongst us than formerly," continued her sister. "The iron wood, solid as marble, fur-

nishes the native of Sumatra with his long spear and massy club. The wild pine is of the greatest use to the inhabitants of that delightful island; frost, snow, and hail are there unknown, but thunder-storms of extraordinary violence are frequent, and the deep and capacious leaves of this tree retain water for a long time, not less for the refreshment of the tree itself, than for the thirsty native of so warm a climate."

"The palmyra also grows there, but it is not so common as in the Birman Empire. The natives of that country are extremely fond of poetry and music. They write from right to left, and make their letters distinct, not joined; their manuscripts are often very beautiful. Their books are generally made of the palmyra leaves, on which the letters are engraved with a sort of pencil called a stylus.

"But to return to Sumatra.

"A species of nettle grows there, the seed of which affords oil; and the stalk, when the bark is stripped off, is made into thread, which is wove into cloth—it is also used for fishing-nets.

"The urceola elastica, that yields our useful elastic gum, is also found in its forests."

"Our elastic gum!" exclaimed Ellen!—"Oh, I know what you mean—Indian rubber—like that which I use to rub out my flowers, when I do not trace them correctly—mamma gave me a piece the evening that I was drawing my yellow iris, and she told me that the meaning of *elastic* is, 'having the power of returning to the natural form, from which it has been drawn or distorted.'

"Will you tell me what part of the tree the Indian rubber comes from?"

"The stem of the plant which produces it is woody, and somewhat resembles a vine; it will climb over trees to a great extent. From wounds made in its bark exudes a milky juice, which possesses the properties of the real caoutchouc, or Indian rubber, and which we as frequently use.

"The sago-tree is of the palm kind; its pith is used as a nutritious food.

"The pepper tree is a climbing plant, rising to the height of our house; it is cultivated round poles, in the same manner as hops; its leaves

are of a deep glossy green; it bears small white blossoms, which become bunches of red berries, resembling currants. When gathered, the berries are dried in the sun; this process turns them black, and then being ground to powder, they are what we call pepper.

"And I have now described the principal trees in Sumatra, though I had almost forgotten, that there

> 'The giant palms lift high their tufted heads,
> And banyan wide his graceful foliage spreads:
> Amidst his boughs the active monkey springs,
> And chattering parrot claps his painted wings.'

"I will lend you a book wherein you may read a description of the palm and the banyan tree."

Ellen was much pleased with this account, and she wished that she could see the 'parrot clap his painted wings:' but as she was a reasonable child, she did not desire impossibilities; and she began talking on other subjects.

"When we were walking this evening," said she, "we were amused with watching the labourers at work in the corn-fields: some were

loading the waggons, and crying, 'Harvest home! Harvest home?'

"Do you think that they reap rice in Sumatra, as they do corn here?"

"The inhabitants of one village," replied Isaline, are, as it were, one family, and they assist each other to gather in the fruits of the earth. Every man is furnished with a kind of sickle in the right hand, and a small basket slung over the left shoulder, into which he lays the ears of rice after they are cut; and when the basket is full, the ears are removed into larger baskets, in which they are conveyed to the barn, where they are placed with great order and exactness.

"Rice is the favourite food of the people, and the only grain they have.

"The villages in Sumatra are mostly situated on rising ground, and surrounded with fruit-trees. The houses are built in a very simple style, with wood; and the roofs, like those of the huts in Otaheite, are covered with the leaves of a species of palm, laid one over the other."

While Isaline was talking, little Lucy had taken a cocoa-nut in her hand.

"The cocoa," said her sister, "answers many

of the most useful purposes of life to the natives of a warm climate, particularly of the East and West Indies. Its bark is manufactured into cordage and clothing, and its shell into useful vessels; its kernel affords a nourishing and pleasant food; its leaves are used for covering houses, and are worked into baskets, and its boughs are of service to make props and rafters.

"And now, dear Ellen, I must close the Cabinet."

"Well," said Ellen, "this dull-looking drawer has given me much amusement!

"I have learned to-night that my muslin frock is manufactured from the cotton contained in a little pod;—that what we call *bark*, is in reality the bark of the quinquina tree;—that the natives of Otaheite make paper of the stalks of the paper mulberry, which they join together with the juice of a berry called *tooö*;—that the ancient Egyptians made *their* paper of the paper rush, or papyrus, which they smeared over with muddy water;—that the river Nile overflows its banks once a-year, and this is the reason that the water is muddy (but I suppose they liked it the better for being so).

"I have learned, too, that the cashew-nut would burn my lips—and—and what else—oh, that camphor—the camphor in mamma's little glass tumbler—is procured from a tree;—the tree is cut down, and divided into little blocks, and then the camphor is *got out*——what is the word that you use, Isaline, instead of *got out?*"

"Extracted."

"Oh, yes, *extracted!* The camphor is extracted from the wood of the camphor-tree. You have told me, also, that there are many fine forests in Sumatra—that the ebony-tree grows there—the iron-wood tree—and the tree —I forget its name, whose leaves can hold water, which the people drink when they are thirsty, and the birds and insects too, I suppose—that Indian rubber is found in the woods of Sumatra, and is the juice or gum of a tree, called by a very long, hard name—"

"Urceola elastica," said her sister.

"Ah! that is the word!" exclaimed the rosy Ellen—"Then came the palmyra leaves, upon which the Birmans write so beautifully—then, the harvest of rice, and every body so busy, with their little baskets slung across their shoul-

ders—(I wonder whether the peasant girls in Sumatra glean the loose ears of rice, as the little girls here glean the loose ears of corn, that lie scattered about)—Then came the villages in that delightful island—and last of all the wonderful cocoa, which supplies the Indian with both food and clothing!

"How much I have learned this evening! and yet, how many things have I still to learn!

"And now I will go to papa, and beg of him to lend me Captain Cook's Voyages—the Voyages of Captain Cook!"

And away the lively and inquisitive Ellen was running, but Isaline stopped her, and said, "My dear, your memory has been employed enough for one day. If you can repeat to me, as accurately as you have now done, all that you have heard this evening, on the evening of this day week, you shall be gratified in having the books you desire."

"*A whole week!*"

Ellen's countenance flagged—but brightening up, she exclaimed:

"A week will exercise my patience, as mamma says, and I shall show her, and you too,

my dear Isaline, at the end of that time, that you have not taught your little Ellen in vain !"

CHAPTER V.

In the grounds adjoining the house was a petrifying spring—that is, a spring in which if any thing be placed, it will become incrusted in stone.

The children were fond of amusing themselves about this brook, and of searching for little bits of stick or moss which were to be found in it.

They were employed one morning in this manner, when Ellen exclaimed,

" Look, Clara, at this beautiful oak-leaf; it is perfectly changed into a substance like stone —and yet the veins may still be seen—the form is exactly the same as if it were green. I will show it to Isaline."

Ellen was returning in triumph up the shrubbery, when her father met her.

" Look, papa," exclaimed she, running towards him, " what I have found !"

" Will it not be worthy a place in the India

Cabinet?" said he, regarding her with fondness. "Let us ask Isaline's opinion."

Isaline was coming towards them. Ellen held up her oak-leaf, and as soon as her sister saw it, she exclaimed,

"What a treasure! it will be quite an addition to mamma's collection! Let us go and look at the drawer of petrifactions—you have not yet seen them, Ellen."

Ellen's eyes always sparkled with delight when the India Cabinet was named, and they did now with more lustre than usual, when her father proposed that her dear oak-leaf should take a place in it.

"Will you tell me, papa," said she, as she walked along, holding her father's hand, will you tell me what petrifactions are?—I know that this change in my oak-leaf is called petrifaction—but I do not know the *cause* of it—I like to know the reasons of things."

"I will try to explain it to you, my dear little girl—I wish to gratify your laudable curiosity.

"*Petrifactions* are bodies or substances, either animal or vegetable, frequently found at different depths beneath the surface of the earth

(and sometimes in springs), that appear in the exact form of the objects they represent."

"Well, but, papa, my oak-leaf, which before belonged to the vegetable kingdom, now belongs to the mineral kingdom, does it not?"

"No, my dear. I am pleased with your conjecture, but although an inaccurate observer might suppose that the leaf was actually changed into stone, I can assure you it is not so. Naturalists have discovered, that the change called petrifaction, takes place by the pores or minute particles of matter, that compose bodies (this oak-leaf, for instance), being filled up gradually with stony particles deposited by the water, which also form a crust over the whole, taking the exact form of the outward or external figure."

"I quite understand you now, papa. I know that the *process*—is that a good word to call it, papa?—the process of petrifaction is very, very slow, and gradual. Charles and I laid a piece of honeycomb in the spring in the park some months ago, and it is yet but partly incrusted."

"Father," said Charles, "I once broke a piece of petrified wood in two—it was stone,

or like stone, throughout, and not, as you say, merely incrusted in it."

"When I said so, my love, I referred to Ellen's leaf, or to any little thing you might find in the brook. But substances have sometimes been found under ground, where, having lain many ages, the solid parts have decayed, and the stony particles have filled up their vacancies, and they then wear the appearance, as Ellen says, of belonging to the mineral kingdom. This was the case with your bit of wood. Many petrifactions of leaves, shell-fish, and the backbones of other fishes, have been found in the earth, at a great distance from the sea, and even on the tops of the highest mountains."

"By what strange accident could they ever come there, papa?" exclaimed Ellen.

"I consider them as a proof of the truth of the universal deluge, when the waters covered the earth, and as they subsided, left a variety of marine animals and shells behind them; which in their process of decay became petrifactions, and are now silent witnesses of that awful event."

"Papa," said Charles, after a pause, "I am

particularly glad to hear you say so.—I never thought of their having been left by the flood before, neither did I thoroughly understand what was meant by petrifaction. You know we have a Cornu-ammonis by the spring in the garden; the gardener's boy told me one day that he believed it was a snake rolled up and turned into stone—but then he did not think of the manner in which it *was* changed from a snake into stone—I did think, but I could not tell—I can now."

"No wonder," exclaimed Ellen, "that William did not think about the process it had undergone—he had no good papa as you and I have, to teach him to trace events to their causes!"

"When we were at Matlock," said Isaline, looking at her little sister, "we were much gratified with visiting the petrifying spring for which it is noted, and we brought home with us a nest and eggs, which had remained in it long enough to wear the appearance of stone. You will see them in the Cabinet."

"How curious!" exclaimed Ellen—"I wish you would take me to see that spring, papa!"

"Many of mamma's minerals, spars, and fossils, were found at Matlock," continued Isaline;

" for the productions of this sort in Derbyshire, and particularly about that delightful village, are numerous and valuable. The northern part of the county is usually termed the Peak, from its sharp pointed rocks and cliffs; and in the caverns under some of these rocks, large pieces of spar, in the form of icicles, and some as clear as crystal, hang from the roof upon the crags that project, and look like the drapery of curtains. It is astonishing to see what elegant articles are formed of them."

" Mamma says that the chimney ornaments in the drawing-room are made of Derbyshire spar," said Ellen; " and the vases in the dining-room, and my little box—the little spar box you gave me, Isaline, and in which I put blossoms of London Pride."

" Blossoms of London Pride!" said Charles laughing, " and why do you keep blossoms of London Pride in a little spar box?"

" Because," replied his sister, rather gravely, " the lid of my little spar box has a magnifying glass fixed in it, and if ever you took the trouble to look at the blossoms of London Pride, you would not laugh at *me* for doing so."

Charles knew that Ellen was fond of flowers, and he sometimes liked (as boys sometimes do) to amuse himself at his sister's expense; but he was very good-natured, and he said, "Well, Ellen, I will not laugh at you any longer—I did not know that the lid of your little spar box had a magnifying glass in it—I dare say you find some beauties in London Pride, which I do not."

"Now, Isaline, will you go on? We were talking about Derbyshire."

"Matlock," said Isaline, "is in a very romantic situation—it is built on the steep side of a rocky mountain, and the houses, placed one above another, are intermixed with shrubs which issue from the clefts of the rocks. We were there just as autumn had begun to tinge the trees with its soft lemon tints—the scarlet berries of the mountain-ash were displayed in full beauty, the larch trees hung their long branches in disorder to the ground, the foliage of the pines whistled in the balmy air, whenever it was gently agitated; and all together formed a fine contrast to the bleak and naked summits of the mountain."

At length the juvenile party found themselves

at home; but before Ellen repaired to the dressing-room, she ran into the library, and taking a blossom from the vase of flowers which stood upon the table, put it into her little box, and carried it to Charles.

"Now, my dear Charles," said she, "if you will take the trouble to peep through this glass, you, even you, will acknowledge that London Pride has beauties.—Look! how each little petal is dotted with pink spots—and then the stamens —how exact!"

"I do acknowledge it, sister," said Charles—"it is extremely beautiful—perfectly elegant—formed with inimitable skill!"

"And now," exclaimed Ellen in a voice of exultation—"now will you not agree with me in what papa says,

"Not a tree,
A plant, a leaf, a blossom, but contains
A folio volume.—We may read, and read,
And read again; and still find something new,
Something to please and something to instruct"—
Even in "London Pride!"

Charles kissed Ellen, and told her he loved her for her good nature; and they went hand-in-hand to the dressing room.

Isaline and her father were already there.

The drawer of petrifactions was soon opened —nothing very brilliant appeared, but, as Ellen said, the specimens contained in that drawer were no less valuable than those contained in some of the others, although they did not make such a show.

" You know how much I was disappointed in looking at the volcanic ashes," exclaimed she— " I thought them dull, dirty-looking things, but mamma told me—and it is very true—that ashes are generally of a dirty gray colour;—if it had not been for those ashes, we should not have heard the long, entertaining account of the interesting Florinda,—of *Monsieur C*——, and of *Vesuvius:* did you ever hear it, papa?—the account of a young and beautiful English lady, who ascended Mount Vesuvius at the time of an eruption—What courage that lady must have had!—the scoria wounded her feet: will you show me some scoria, papa?——Oh, papa, here is the bird's nest—the bird's nest from Matlock—how curious! moss, straw, and sticks, all are incrusted in stony particles—it looks as though it were made of stone, nest, eggs, and

all!" cried Ellen, quite forgetting the burning Vesuvius, and the "interesting Florinda."

It took some time to examine this petrified nest: but when Ellen had looked at it as long as she thought proper, and had looked at some nuts, and shells, and bones, and at a mineralized Cornu-ammonis, she begged her father to open the next drawer.

Before complying with her request—"Do you know, my little girl," said he, "what the study of minerals is called?"

"No, papa."

"The science of mineralogy.

"All minerals, that is, all earths, soils, stones, and metals, are divided into four classes.

"All the substances which form the ground and earth are called minerals, papa; in short, things which are neither animal nor vegetable must be mineral—and these *things* are divided into four classes—I understand you so far, dear papa."

"The first class," continued her father, "contains those called *earthy* minerals, being such as are without taste or smell, as clay, spar, diamonds, rubies, crystal, emeralds, and sapphires."

"Chalk, stone, and sand, too, papa:—they have neither smell nor taste."

"Very true," said her father. "The second class includes *saline* minerals, which are heavy, soft, and partly transparent."

"What is the meaning of the word saline?"

"Of a salt or pungent taste."

"Alum, saltpetre, salt itself, papa."

"Well done, my Ellen!" said her father, and he stroked her rosy cheek.

"The third class contains *inflammable* minerals," continued he, "such as are light, brittle, and never feel cold: by inflammable is meant capable of taking fire—capable of combustion."

"I have learnt in my 'Blair's Catechism,'" said Ellen, "that coal is a mineral substance dug out of the earth, and used for fires because very combustible—so, coal must be placed in the third class, which contains the inflammable minerals."

"The fourth class," said her father, "includes those which are composed chiefly of metals, and called *metallic* minerals; they are heavy, cold, capable of making wire, malleable,

and capable of being heated and worked into different shapes, as gold and silver."

"Now, papa," exclaimed Ellen, "I have them all in order due:

Ist Class—Earthy minerals.

IId Class—Saline minerals.

IIId Class—Inflammable minerals.

IVth Class—Metallic minerals."

"When you are thoroughly acquainted with each of them," said her father, "you will understand mineralogy. From mineralogy we proceed to Chemistry—but we will leave that out of the question at present. This drawer," continued he, opening it quite wide, "contains specimens in each class."

"Oh, it is a beautiful drawer!" said Ellen.

"And here," cried she, with an exclamation of delight, "here is the *geographical lichen*—the map-stone—with its green and black lines, just the same as ever—the map-stone we so often found in Cumberland—it makes me think of those wild mountains, pointing their blue tops to the clouds. How much pleased I was when I first found it! Do you remember, Isaline, the happy day that we spent near the

fisherman's hut, when we took tea in the wood, and talked about swallows, and about humming-birds, and wrens—about the little wren which creeps up the stems of the crown imperial? Will you show me a little wren sipping honey, dear Isaline?"

"Next summer, probably, I may, my love. It is now too late in the season—the crown imperials are over."

"Then I must have patience till another year," said Ellen, "for I cannot help it. I will look at this drawer——Oh, papa! what a beautiful piece of marble! Marble is an earthy mineral, but where does it come from, papa?"

"Marble is called a calcareous earth, and—"

"*Calcareous*, papa! will you be my dictionary?"

"Calcareous is derived from the word *calx*, which is lime in Latin; and lime is procured from any calcareous earths, by burning them in a strong fire. Marble is the luxury of architecture; it is brought from many countries. Great Britain produces some. The piece in your hand came from Italy. The little islands in the Archipelago, near Turkey, yield some

fine sorts. That of Paros is noted for whiteness and purity, and the finest antique statues have been made of Parian marble."

"The Isle of Paros is also in the Archipelago: is it not, papa?"

"Yes, my dear; and so common is marble there, that the natives build their houses of it."

"One thing puzzles me, papa; you told me just now that marble is calcareous, or that it may be burnt into lime—marble is generally dark-coloured, you know, and sometimes black; how then can it be changed into white lime?"

"A violent heat will expel most of the colouring matter of marbles, and make them white."

"Thank you, papa."

"Father," said Charles, "chalk also is a kind of calcareous earth; is it not?"

"Yes, my dear; and limestones are also—indeed the name *limestone* is derived from its calcareous property."

"Look, papa," exclaimed Ellen, "at this beautiful piece of spar, glittering like a diamond.—Where did it come from?"

"Not any great way off, my love."

"What! Is it Bristol-spar, papa? Did you bring it from Clifton, when you were there, Isaline? Did you find it among the rocks yourself?"

"That piece came from Clifton," replied her sister. "I did not find it myself, but I bought it of a poor boy, whom we found wandering in search of specimens to sell. These clear and brilliant stones are not uncommon among the rocks, particularly that called St. Vincent's rock; but the workmen who are employed about them, generally take care to secure any rare specimens."

"Workmen!" exclaimed Ellen: "why are there workmen always about?"

"Because these rocks," replied her sister, "consist almost entirely of one of the calcareous earths of which we have been speaking —of exquisite limestone, and supply from an inexhaustible fund every want of the neighbouring farmer and builder."

"I know," said Ellen, "that lime is of use to the farmers, for when I was walking with Charles one day in a ploughed field, we saw many little heaps of it spread about the ground,

and he told me it was for manure; but as to the builder, papa—a builder is a man who builds houses, and houses are made more commonly of bricks than stones—so, I cannot tell, papa, why *he* should want lime."

"Think again, Ellen."

Ellen thought again, and she thought to some purpose this time.

"*Mortar!*" exclaimed she—"the cement by which bricks and stones are held together is—must be—made of lime."

"Lime and sand, well mixed together," said her father.

"Well, papa, lime and sand mixed together make mortar—so I find and acknowledge that lime-stone is of use—great use—to the builder."

"The workmen who dig it," said Isaline, "are let down over the steep precipices by means of ropes; it is a dangerous way of earning a livelihood. The stone is sometimes polished and made into chimney-pieces, but it is chiefly burnt for lime, for which purpose vast quantities of it are blown up with gunpowder. The effect of the explosion, re-echoed from cliff

to cliff, is more grand and sublime than you can easily imagine.

"As I said before, we bought this piece of spar of a little boy whom we met wandering among the rocks; the countenance of this child was pleasing yet melancholy, and when he offered us the contents of his basket, his heart seemed overwhelmed with grief; on questioning him, we found that he had lost his father, who by a false step had been precipitated down seventy yards of almost perpendicular descent."

"Poor little fellow!" said Ellen—"how unhappy—how melancholy I should look, if I had lost my dear papa!"

"He lived with his mother at the foot of St. Vincent's rock," said Isaline, "and we often visited their cottage: the little boy earned a few pence now and then, by selling pieces of spar, petrifactions, metallic ores, mundic, and other fossils, with which the workmen supplied him, for they all seemed to take an interest in the welfare of the unfortunate Edwin."

The tears came into Ellen's eyes.

Her father, observing the effect which Isaline's recital had made, although he did not wish to check the tender tear that starts for others' woes,

endeavoured to engage his little Ellen's attention again.

"Now," said he, "let us pass on to the *argillaceous* earths—they are a second class, as it were, contained within the first.—Charles, can you tell me what is meant by the word argillaceous?"

"*Argilla* is Latin for *clay*, papa—I suppose it means clayey."

"It does. In general the argillaceous earths are of a soft texture, and will become sticky by being tempered with water."

"Oh, yes, papa," said Ellen, her looks brightening as she spoke, "I have seen the man at the brick-kiln in the village, making bricks, and he mixed the clay with water."

"These earths," said her father, "differ very much from each other in colour, as well as in many other respects. Some are perfectly white, as that of which tobacco-pipes are made. Others are brown, yellow, blue, and in short of all hues, which they owe to mixtures of other earths or metals."

"Are slates of the argillaceous class, papa?" said Ellen.

"They are, my dear."

"And now we will talk about the third class of earths, which contains those called *siliceous*—some of them will undoubtedly please you, my little Ellen. Let us, however, first apply to Charles for an explanation of the term siliceous.'

"It is derived from the Latin word *silex*, papa, which signifies a flint-stone."

"I will tell you," continued the kind father, "the principal properties of these earths. They are all very hard. They mostly run into particular shapes, with sharp angles and points, and are transparent, upon which account they are sometimes called crystalline earths. They do not in the least soften with water, like clays; nor do they burn to lime as calcareous earths do. Flint, of course, belongs to the siliceous class, and sand, and pebbles, and precious stones, and—"

"And this beautiful piece of Bristol spar, papa—and this fine specimen of Labrador spar.—No. 29, Labrador spar—which, when I hold it in one direction, is of a bright green colour—and now, in another, it is of a charming yellow; these—these—belong to the siliceous class of earthy minerals—Do they not, papa?"

" Yes, my dear, and all other spars and crystals. Allow me to open this drawer by you, and you shall have the gratification of looking at the precious stones."

Ellen was delighted with the brilliant appearance of this drawer of treasures. Isaline pointed out the diamond, which is the most valuable and hardest of all jewels, and is found only in the East Indies and Brazil—the mineral beds of these countries being fraught with precious gems and ores. The red sparkling ruby next caught her attention, which is sometimes found in Hungary. Then the emerald, a very bright and polished stone, always of a beautiful green, mostly found in the East Indies. Then the yellow and transparent topaz, the sky-blue-coloured sapphire, the purple amethyst, and the transparent stone called crystal, white like the diamond, but much inferior in lustre and hardness, and found principally in the Island of Madagascar.

Ellen's lively eyes darted from one to another with astonishing rapidity; and her questions, pronounced in a breath, were too numerous for Isaline to answer.

At length a mineral substance fixed her atten-

tion; it was of a whitish or silver colour, and a woolly texture, consisting of small threads or fibres.

She asked its name.

"It is called Asbestos," said Charles, "and a method has been found of working it into cloth and paper."

"Oh, Charles, you are in play! How could any one possibly make cloth of stone?"

"It is nevertheless true," continued her brother, "however much you may be inclined to doubt it—I appeal to papa."

"Charles is right," said his father, "the fibres of this mineral may be manufactured into cloth, and it is endued with the wonderful property of resisting fire, and remaining unconsumed in the most intense heat. This kind of linen was highly valued by the ancients, who used it in the making of shrouds for royal funerals, to wrap up the corpse, so that the ashes might be preserved distinct from those of the wood of which the funeral pile was composed.

* * * * *

And now, my little mineralogist, we have

gone through the three great divisions of the first class of minerals, the *calcareous*, the *argillaceous*, and the *siliceous* earths. How inexhaustible is nature!"

At this moment the sound of a carriage was heard driving up the gravel-walk; company was announced, and as Ellen's father closed the doors of the India Cabinet, he said, "Isaline, my dear, will you give your little sister some account of a salt-mine?"

CHAPTER VI.

But Isaline was called away also, and it was some days before Ellen could gain an interview with her sister in the dressing-room; however, as she was going to the nursery one morning to take little Harriet's wax-doll, she heard her voice, and hastened back immediately. The kind and good-natured Isaline was reading, but she guessed Ellen's wishes, and closed her book when she entered the room.

"And why do you think, dear sister," exclaimed the rosy girl, "why do you think that

papa wished you to give me a description of a salt-mine ?"

" Because he likes you to receive pleasure,—this was one reason ; and another reason is, that there is no good specimen of a *saline* mineral in the cabinet, and he thought that such an account might compensate for the omission."

" But I thought," said Ellen, " that salt was obtained from sea-water."

" A great quantity of it is, my dear, although much of the salt we use is dug from pits, or mines in the earth."

" Indeed ! will you tell me where these mines are, and in what manner the salt is procured ?"

" Immense mines of rock-salt have been discovered in England," said Isaline : " but I will give you an account of one at a village called Wielitsca, which will give you an idea of them, and serve for a description of salt-mines in general. It is at so prodigious a depth under ground, that the bright beams of the sun can never enter, yet the inhabitants know not what darkness is ; lamps are kept always burning, the light of which, shining upon the glittering salt, makes it appear a complete palace of diamonds."

"Inhabitants! Do the people then live under ground?"

"Yes: the salt-mine is a kind of subterraneous republic; many of the miners are born and live all their days in it. What astonishment must a traveller feel on arriving at the bottom of this wonderful place. The first thing that strikes him with surprise is an immense number of little huts, hollowed out of the salt, and upheld by huge pillars, cut with a chisel by the miners (these prevent the roof from falling in, as it would otherwise do, and bury them all in its ruins); nor can he be less surprised at observing a clear rivulet of fresh water running through the midst of these glittering mountains, and supplying the people with a source of comfort and accommodation little to be expected in such a dreary region. The workmen he will find employed in hewing the rocks of salt, which from the flambeaux kept constantly burning, are white as crystals, or tinged with all the colours of the rainbow. As soon as the massive pieces are raised from the quarry, by means of engines, they break them into fragments proper to be thrown into the mill, where they are

ground into a coarse powder, which serves the purposes of sea-salt."

"How glad I am that I am not one of the miner's children, that I was not born in the mine of Wielitsca!" cried Ellen. "I could never have rambled upon the Cumberland mountains,—I could never have gathered wild roses and yellow flags for you to copy,—nor have seen the young lambs skipping about in the meadows early in the spring, nor have heard the little birds warble among the green boughs;—oh, Isaline,—how sorry I am for those unfortunate children."

"They have never known your pleasures, my love, therefore they cannot regret the want of them!"

"Here is a poetical description of a town in a salt-mine: when you can repeat it perfectly, you shall see the two remaining drawers of the India Cabinet."

Ellen had a retentive memory. The following morning she repaired again to the dressing-room, with the paper in her hand.

Her father was reading a letter to her mother, when she entered: Ellen retreated.

"Do not be alarmed, my dear little girl, you

may come in," said he, "I will finish my letter another time." And as Ellen's father spoke, he placed her on his knee, and she repeated to him clearly and distinctly the verse she had been learning.

"Thus, cavern'd round in Cracow's mighty mines,
With crystal walls, a gorgeous city shines:
Scoop'd in the briny rock long streets extend
Their hoary course, and glittering domes ascend;
Down the bright steeps, emerging into day,
Impetuous fountains burst their headlong way,
O'er milk-white vales in ivory channels spread,
And wandering seek their subterraneous bed.
Far gleaming o'er the town transparent fanes
Rear their white towers, and wave their golden vanes;
Long lines of lustres pour their trembling rays,
And the bright vault returns the mingled blaze."

"And now, tell me," said her father, "what are meant by 'Cracow's mighty mines?'—what is meant by the 'briny rock?'—and what are meant by 'transparent fanes?'—and what is meant by

'Long lines of lustres pour their trembling rays?"

Ellen had fortunately asked for a particular explanation from Isaline, of every word she did not understand. Children ought never to learn

poetry, unless they have a kind mother or sister to whom they can apply when under any difficulty, as Ellen did.

She smiled, and said, "The mines are called 'Cracow's mighty mines,' because they are only a few miles from the city of Cracow; Wielitsca is but a village. 'The briny rock,'—briny means salt, papa, and as these rocks are composed of salt itself, they may well be called briny."

"And now, 'transparent fanes?'"

"The meaning of the word fane, is temple: 'transparent fanes,' the vaults or temples cut between the pillars of salt, are what are meant by transparent fanes: transparent means clear, bright. Lamps are kept constantly burning among them, and the light from so many torches glittering against the salt rocks, is what is meant by a 'mingled blaze,' and 'long lines of lustres.'"

Ellen's father was convinced that his little girl understood the poetry she had been repeating; and he said, "I will reward your attention, my love, by showing you the two remaining drawers of the Cabinet."

"This," continued he, opening one, "con-

tains many specimens in the third and fourth classes. Let us find an inflammable mineral. Here is a piece of *numia* or mineral tallow, which was dug up on the coast of Finland; and here is a specimen of amber; amber is found in several countries of Europe, beneath the surface of the earth, among clay and sand, or on the sea-shore."

Ellen took this yellow transparent mass in her hand.

"It is capable of combustion," said her father, "as coal is, therefore it is an inflammable.

"And now we will proceed to the fourth and last class, the metallic minerals. How are they known?"

"They are heavy and cold, papa."

"They are also distinguished by being opaque, ductile, and malleable."

"Oh, papa," exclaimed Ellen, "do you believe it possible for me to remember those hard words?"

"I do believe it very possible, especially when you have heard what they mean.

"Metals are brilliant, you know. Look at

my watch: although gold is so bright, it is not transparent; the thinnest plate of metal that can be made, will keep out the light as well as a stone wall."

"So far, so good, papa.—The piece of copper upon which Charles was trying to engrave one day was as bright as a mirror, but not transparent; I could not see through it, so it was *opaque*.

"When metals possess the property of spreading under the hammer, and are thus capable of being worked into shape, they are called *malleable*. Look at this crown; it is not in the form it was when dug out of the mine; therefore silver is malleable.

"When metals can be worked into wire, they are called *ductile;* when they can be melted, they are called *fusible*."

"Well, now, papa," exclaimed the intelligent Ellen, "to sum up the character of a metal, it is a *cold*, *heavy*, *opaque*, *malleable*, *ductile*, and *fusible* mineral! I did not expect to have been able to remember these words, but I understand what they mean, and remember them too."

"Success is the reward of attention; you have repeated them admirably.

"Metals are seldom found in the earth in a pure state, but mixed with other minerals, and they are then called *ores*. These ores are commonly found in mountainous countries, chiefly in crevices of rocks, forming veins of ore. The cavities made in the earth, in order to extract them, are called mines."

"But then, how is the real metal separated from the other earths, papa?"

"By the force of fire.

"Gold and silver are called *perfect* metals, because they lose nothing by the heat of the fire; other metals are called *imperfect*, because they decrease by heat, and can easily be dissolved or corroded by acid."

"What does the word *corrode* mean, papa? —And what is an *acid?*"

"The word corrode, signifies to eat away by degrees; and an acid is any thing sour or sharp."

"Gold is found chiefly in America; is it not, papa?"

"Yes: in South America, in the East-Indies,

and on the coast of Africa. The sand of some rivers contains particles of gold; it is washed down along with the soil from mountains.

"Silver is chiefly found in the mines of Potosi in Peru.

"Here is a specimen of copper in its native state."

"Indeed, papa!" exclaimed Ellen; "and where does copper come from?"

"The best and purest is found in the Swedish mines, but the largest mine is that upon Paris mountain, in the Isle of Anglesea."

"Anglesea?" said Ellen, "the island north-west of Wales, which forms one of the Welsh counties."

"Paris mountain consists of copper ore, from which immense quantities are dug every year. There are three kinds of copper: the common, the rose copper, and the virgin copper," said her father.

"And now, papa, will you tell me something about iron?—I have found a specimen of iron ore,—'No. 61, iron ore from the isle of Elba, near Corsica.'—I know where Corsica is, papa, it is in the Mediterranean; but is the island of

Elba particularly famous for iron? that is what I want to know."

"Yes: it is remarkable for mines of iron, as well as quarries of marble. Iron abounds in many of the European countries, and is the most useful of all the metals, and it is likewise the most common.

"Here is a specimen of lead ore. Lead abounds most in England; the best mines are in Cornwall, Devonshire, Derbyshire, Northumberland and Durham."

"I thought that Cornwall was famous for its *tin* mines, papa?"

"So it is, my love; they are supposed to be the most productive of any in Europe. Very fine tin is also found in the peninsula of Malacca, in the East Indies.—And now, my dear little girl," continued her father, "we have completed our examination of the six drawers. There are many specimens yet unnoticed, certainly, but those will afford you amusement when you are older, when you have made some progress in the science of mineralogy."

"Oh, papa," exclaimed Ellen, "I wish I had all the pleasure to come over again—it is gone —gone for ever!"

"What a melancholy tone!" said her mother; "surely the remembrance of the pleasure you have received, and of the knowledge you have acquired, will remain, although the novelty of seeing the India Cabinet for the *first* time be gone off.

"You may look at it again sometimes, and as we propose going to the sea-side in the course of a week or two, you may perhaps have the opportunity of making some addition to it, in your rambles among the rocks."

"So I may, mamma. And every time that I take a peep at this Cabinet, it will bring to mind many agreeable things; and these things will make up—compensate as you say—for having lost its novelty.

"It will make me think of the day we spent on the mountain, and drank tea in the wood, and talked about swallows.

> 'The swallow, that on rapid wing
> Sweeps along in sportive ring,—'

led to the conversation about the wren, mamma; the wren led to the humming-bird, the smallest of all the feathered tribe, mamma; the humming-bird led to your Cabinet: so you see I owe

all my pleasure to that little humming-bird.—— Oh, no!" continued Ellen, as if recollecting herself,—"I owe it to you, dear mamma, for allowing me to see it, and to you, dear papa, for having taught me so much; and to you, my dear Isaline, for having employed so much of your time in telling me what I did not know."

"Well, my dear Ellen," said her father, "if you have been taught to consider that the productions of Nature are without limit and without end; if you have been taught to perceive how much perfection is displayed in every pebble, in every shell, and in every leaf; if you have been taught to regard the wondrous works of God with admiration and astonishment; then we shall not regret the time that has been spent in showing you the India Cabinet."

CHAPTER VII.

In the course of a few days every thing was ready for the proposed journey.

The delightful village of Charmouth, as affording many gratifications for the lover of nature, was fixed upon for an autumnal residence. It occupies an elevated situation, and conse-

quently commands many extensive and beautiful prospects, both of the sea and land.

The wished-for day at length arrived; the juvenile group, gay, lively, full of health and spirits, assembled together; and after an early breakfast, Isaline, Charles, Ellen, and their father and mother, ascended an open landau; another chaise conveyed the two nurse-maids and their young charges, for *carts* were not engaged upon *this* expedition.

But whenever the carriages stopped, the little ones waved their handkerchiefs, and called out to Charles and Ellen to know whether they thought this mode of travelling as delightful as the rustic vehicles in which they had rode to the fisherman's hut in Cumberland.

Evening came on; the sun had just tinged the horizon with its last rays, when the party arrived at a picturesque cottage prepared for their reception.

* * * * *

THE END.

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