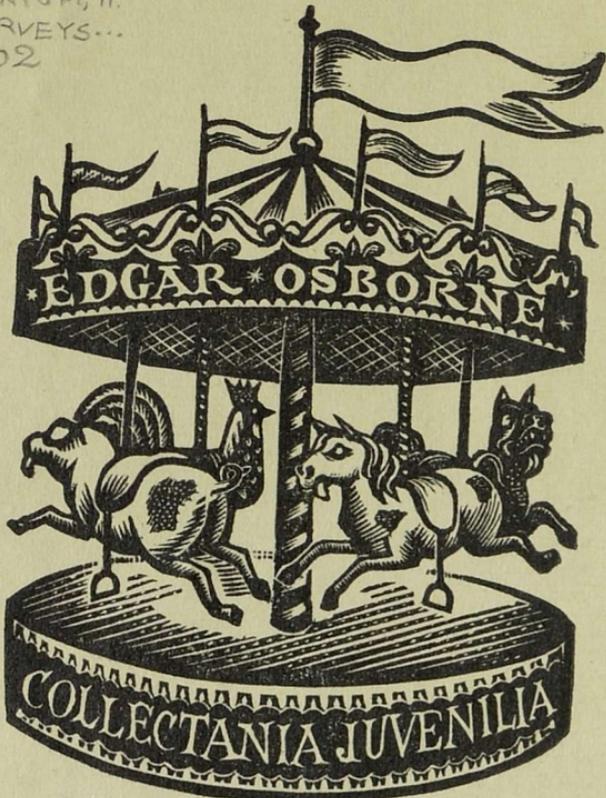


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SURVEYS OF NATURE:

A

SEQUEL

TO

Mrs. TRIMMER'S INTRODUCTION;

BEING

*Familiar Descriptions*

OF

SOME POPULAR SUBJECTS

IN

NATURAL PHILOSOPHY,

*Adapted to the capacities of Children.*

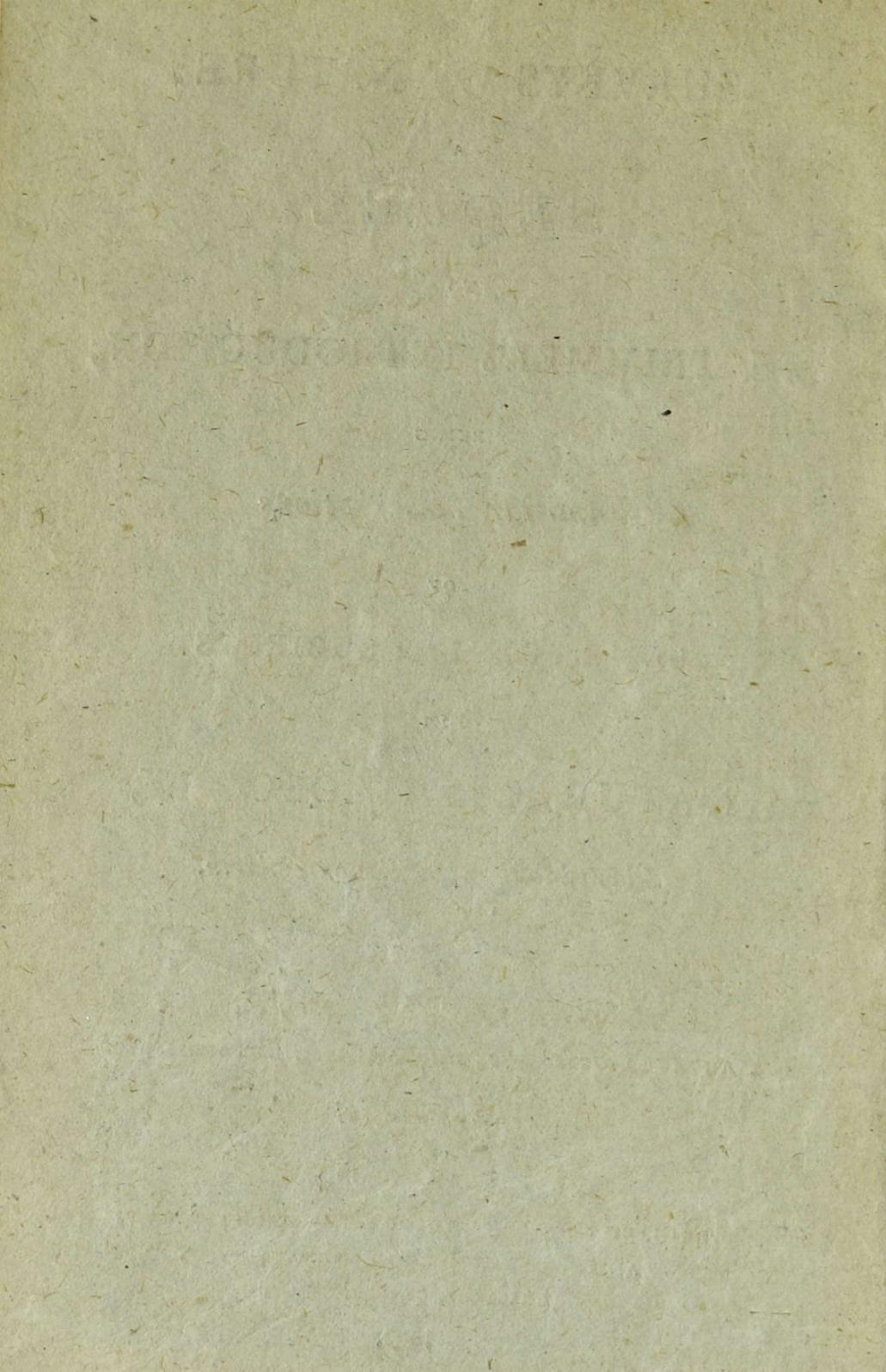
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By HARRIET VENTUM,

AUTHOUR OF SELINA, THE AMIABLE TUTORESS, &c.

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LONDON:

PRINTED FOR JOHN BADCOCK, PATERNOSTER-ROW,  
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1802.



## P R E F A C E.

*T*HE favourable reception with which the public have been pleased to honour my former productions, has prompted me, perhaps with too much temerity, again to take up the pen, and again to solicit their indulgence.

The following work is written purposely for the instruction, as well as amusement, of children from the age of eight to twelve years.

Engaged in the business of a school, and constantly in the habit of teaching, I found that although Mrs. Trimmer's Introduction was a very serviceable work for the perusal, and not above the comprehension of my younger pupils, something on the same plan, but on a rather more  
enlarged

enlarged scale, with more particular descriptions, would be highly necessary to assist my purpose of instruction with the elder ones.

I have therefore commenced this little work, with the hope that it might be found useful in facilitating a knowledge of nature, and leading the young mind into a desire to investigate "causes and effects;" that it might also instruct them in their obligations to the dispenser of all good, and lead them, with grateful hearts, to praise the bounteous hand which disposed all with such exquisite harmony and proportion.

I have chosen dialogue as my method of conveying instruction, because it is natural for children to ask, and their parents, friends, or instructors, to resolve their questions. I have put the different descriptions into plain and simple language, as better adapted to their capacities, and have carefully avoided technical or abstruse terms, that so my meaning may be the easier comprehended.

I am aware, that in the present age of improvement, few methods of conveying instruction to youth have been left untried by authors of eminence and high respectability. Works of every description have issued forth from the press, all calculated for the purposes of improvement to the rising generation. What has been so often and so ably done by skilful and learned men, appears bold in a woman to attempt; but some works were too profound, some too prolix, and others again too voluminous for my purpose. To obviate all these little inconveniences, and perhaps not without a latent hope of this work being well received, I have assiduously laboured to attain the end proposed.

What its success may be is yet doubtful; it was undertaken with a good intention, and I have only to hope that it may not be considered as useless by those to whom it is particularly addressed.

I have varied my subject as the occasion required, not confining myself either to  
class

*class or matter, but guided by the circumstances which seemed to exist, and the enquiries which led to the disquisition.*

*For the feebleness of the attempt I have only to intreat the same candour and generosity I before experienced; and that being the trust upon which I rest, is the only motive which makes me commit this book to the eye of critical observation, and general opinion, with any thing like hope.*

H. VENTUM.

LONDON, October, 1801.

## SURVEYS OF NATURE.

### WALK I.

“ ——— theirs is indeed  
“ A teaching voice ———.”

COWPER.

“ Who can observe the careful Ant,  
“ And not provide for future want.”

GAY.

“ *ELIZA* and *Emily*,” said *Mrs. Harrison*, as she entered the parlour, “ put on your bonnets, and let us enjoy the beauties of the evening in a walk ; but first let me see how you have performed your tasks.” — *Eliza* produced the rose she had been painting, and *Emily* put into her mother’s hand an extract from her Geographical Grammar, she had just been making. — “ Very well indeed, my dears,” said their delighted parent, “ this proves your attention, and serves to convince me the ideas I had formed of your abilities were just ; but come, let us now partake a little recreation, I will saunter slowly through the  
A lane,

lane, by the copse, and you, I dare say, will presently overtake me." The summons for a walk with their mother was too agreeable to be delayed, and hastily attiring themselves, the young ladies joined her.

"But where is *Frederick*?" said *Mrs. Harrison*, as she saw her daughters hastening on to overtake her; "he has not yet finished his writing exercise, mama," said *Eliza*, "which he is anxious to complete, but he bid me say, if you would walk by Brooks' field, he would be with us presently." "'Tis very well, my dear, his diligence should be indulged, we will follow the road he has prescribed."

*Emily*.—"What a number of little hillocks there are in this path, mama! how curiously they are thrown up! they appear as if something more than chance had formed them, I could almost conceive they had been piled bit by bit, they lay so regularly."

*Mrs. H.*—"Do you not know that they are the nests of Ants, whose residence, in  
fine

fine dry weather, is pretty deep in the ground, but who, in a wet season, contrive to pile a small mass of earth or gravel over the entrance of their habitations, to defend them from the damage they might otherwise sustain? I think I need not tell you that this little creature is rendered famous, and actually held up to man as a proverb of industry; even Solomon has immortalized it, by saying, "go to the Ant thou sluggard, consider her ways and be wise." Their nests are well worth the inspection of the curious; so much art, so much design, and so much utility, are at the same time evident in their construction. Their residence has all the appearance of a little city; drains are every here and there formed to carry off the water, which might otherwise occasion them great damage, by overflowing their granaries, and destroying not only the produce of their present labours, but the hope of future subsistence; for the provident foresight of these little creatures, is such as to direct them to

lay up a proper store of provisions for winter."

*Emily.*—"Then mama, they never experience a famine?"

*Mrs. H.*—"On this account they are indefatigable in their exertions during the course of the summer. Not one of this vast community is idle; should there be one found, the others drag him to the mouth of their habitation, and cover him with gravel or sand, or beat him till he is either incapable of bearing his post in the general labour, or willingly executes his charge. Their care too of their young is admirable; it is, indeed, a lesson of instruction to parents: thus these insects display indeed so much genuine wisdom in the arrangement of all their little concerns, that they have been thought worthy the attention of the greatest moralists, as well as naturalists, who have been at much pains to examine into their peculiarities, with even critical attention."

"*Eliza.*

“ *Eliza*.—“ Observe, mama, here are a number of them ascending that tree.”

*Mrs. H.*—“ Here then (taking a small *microscope* from her pocket) look through this, and tell me if you observe any thing worthy attention in them.”

*Eliza* took the glass, and presently called to her sister to participate her pleasure. “ Dear *Emily*, do but look, every one is loaded ; see, see, here are four carrying a small grain of corn ; they are fatigued, and are resting it upon the bark of the tree : there are even some others coming to relieve them, but still they proceed with their charge.”

*Mrs. H.*—“ Follow them with your eye to their nest, and observe how carefully they will drag it to their repository.

*Emily*.—“ I should like to see their granary, mama.”

*Mrs. H.*—“ To do so, my dear, you would be the ruin of their whole colony ; the care and anxiety, the solicitude and fatigue, of the foregoing months, would

all be rendered useless. I wish you to investigate causes and effects, but not by any acts of wanton or premeditated cruelty, inflict sufferings even upon a reptile."

*Emily.*—"Is an Ant a reptile?"

*Mrs. H.*—"Yes, my dear, and a very mischievous one. It is, as I have told you, an emblem of prudence and industry; by its care and foresight it provides against the wants of winter, when it is, from its nature, incapacitated from providing for its existence; cold, snow, or hail, or even heavy rains, would inevitably destroy an entire nation; it therefore provides against the season in which such weather is expected, by cloathing its little habitation not only with such provisions as is necessary to its future preservation, but for defending it by every means in its power from the inclemency of the weather. It is, however, a mischievous little animal, and is dreaded as an inveterate enemy to the vegetable world. Were either of you to lay a piece of fruit on the ground, or any where

where within the vicinity of its habitation, you would presently see it covered with these creatures, who, in a short space of time, would so effectually devour it, as to leave none of it visible."

*Emily.*—"Dear, mama, we should like to see that."

*Mrs. H.*—"Perhaps an experiment or two of this nature might be usefully made, as it would convince you of their quickness, dispatch, and persevering industry. The Ants of America and the West Indies are a very serious evil, the devastation they commit, not only upon fruit and flowers, but upon linen and books, and, in short, upon every thing within their attainment, is considerable. Your uncle, when he last wrote to me to send him out a new stock of linen, informed me that half of his last (such, indeed, as he had neglected to make use of) had been destroyed by these creatures, whom he found a terrible annoyance: his books too they had totally destroyed. Their bite is sharp and painful,

and in some degree venomous: it is generally supposed that they are irascible little animals, of very greedy rapacious natures, and perhaps this idea is founded upon the eagerness with which they seek for subsistence.

Of their utility, in the scale of creation, I can give you but little information, however, of this we are assured, that *nothing was made in vain*: and I am inclined to think so, for take the whole creation, animal, vegetable, and mineral, you will find that one creature depends upon another, that the existence of *all* depends upon *all*, and, therefore, that the Ant, who to us appears a tyrant and destroyer, has been suffered to exist, not merely for itself, but as a necessary link in the great chain; but were they of no other use, the admirable lesson they hold up to mankind of the uses of foresight and œconomy, should be sufficient to render them valuable.

“ Their

“ Their industry and perseverance serve to instruct man in his duty to himself, to teach him that the season of youth, frittered away in idle pursuits, or vain search after the phantom *pleasure*, exposes him, in the winter of life, to a variety of troubles, and leaves him to an ineffectual struggle with fortune and his passions; but when, like the industrious Ant, he shall apply his youth and strength to the purposes of industry, or rather, to hold out the metaphor more strongly, he shall, in the summer of his days, endeavour to provide against the winter that is approaching, his remnant of life shall be made comfortable; reaping the peaceful harvest of industry, he shall be gladdened by its produce, and repose in security under the vine of his own planting.

“ This metaphor too, my dear girls, is analogous to our future state, it may teach us to remember, that in our youth we should fortify our minds with such virtues as may make the down-hill of life pleasant

to us: that, by walking faithfully in the ways of God, we may not leave our repentance to a death bed, or see our starving souls upon the point of expiring for that celestial food, which in youth we should have stored up as a provision for the well-closing of this life, and the hope of immortality in that which is to come.



“ But yonder is *Frederick*, let us stop till he joins us, he brings something in his hands, let us meet him, and see what new curiosity he has for us.”

*Emily*.—“ A Swallow, mama.”

*Eliza*.—“ Dear *Frederick*, give it me, it is a pretty bird, but how wild it looks! how its little heart beats! how it flutters!”

*Mrs. H.*—“ Let it fly, my dear *Frederick*, confinement of any kind is against its nature; were you even to keep it, and imprison it in a cage, it would probably either beat itself to pieces against the wires, or pine itself to death,

“ Be generous, then, my boy, and restore it to liberty; it is but a visitor, so let us treat it with civility.”

*Emily.*—“ A visitor, mama, why does it not constantly abide with us?”

*Mrs. H.*—“ According to the opinion of most naturalists it does not: it becomes an inhabitant of our climate in Spring, and quits it at the fall of the leaf. Other naturalists assert that these birds are in a torpid state during the Winter, and remain in holes under ground, fixed bill to bill, and claw to claw.”

*Emily.*—“ That is indeed very strange.”

*Mrs. H.*—“ 'Tis a wonderful proof of the infinite wisdom of God in endowing even the smallest, and most insignificant part of creation, with such a portion of natural instinct as instructs it to quit a country at a certain time, when it shall be no longer congenial to its feelings, or afford it proper means of support, which enables it to traverse vast seas, and fly over  
immense

immense tracts of land in search of a spot which offers it security and comfort."

*Fred.*—"Where do they go, mother, when they leave us?"

*Mrs. H.*—"That is uncertain, my dear, but I believe to the southward.

*Emily.*—"Why do they go, mama?"

*Mrs. H.*—"Because the cold of these countries in Winter is too severe for them. They are of a very tender susceptible nature, and would die, probably, if they staid here. It is computed that a bird can fly at the rate of an hundred miles in three hours. This amazing strength and velocity of wing enables them to skim across vast seas; besides, they have other advantages; a bird flies strait forward, whatever course it takes, their journeys are consequently much quicker performed than if they were obliged to take a circuitous course, or wait for winds and tides; but during this period of emigration they are exposed to incredible fatigue, and are frequently

quently seen to drop dead, or totally exhausted, upon the decks of ships. It is common to see the rigging of vessels, in certain latitudes, crouded with these little travellers."

*Emily.*—"Do all birds leave us in winter?"

*Mrs. H.*—"No! the Sparrow, Partridge, Linnet, Thrush, Woodpecker, Robin-Redbreast, Blackbird, Redstart, Wren, and many others, never leave us, they are hardy birds, and can endure the severity of Winter better."

*Fred.*—"What other birds then migrate besides the Swallow?"

*Mrs. H.*—"I have told you, my dear, that the migration of Swallows is still a matter of doubt with *ornithologists*. Yesterday I was reading an extract from the letter of an American gentleman, who asserted, that, being in company with a friend on the banks of the Hudson's river,

he observed several large flights of birds, one of which approached so near them, that they plainly discerned them to be Swallows; they hovered for a considerable time over the river, in such a state of confusion and insensibility, that they flew one against another, and finally the whole company dropt into the water, and sunk like stones."

*Fred.*—"This is indeed very surprising, mama, and I think it a strong proof of their migration."

*Mrs. H.*—"Not from this country at least, *Frederick*, for this circumstance took place very distant from us, and on the 14th of August. You forgot I told you that they did not quit these shores till the latter end of Autumn, sometimes about September or October. I think it rather affords proof of their torpidity; for the stupor of death overcoming them, they were unable longer to direct themselves or  
resist

resist its force, but fell without sense or motion into an element at variance with their natures.”\*

*Eliza.*—“ But some birds can swim, mama.”

*Mrs. H.*—“ Yes, those that are provided by nature with the means; they are generally web-footed, that can combat the water; Ducks, Geese, Swans, Gulls, Cormorants, and many others, derive their chief subsistence from the water; but this is not the case with the Swallow, although you may have seen it skim the surface of the water so near as to dip the extreme edges of its wings, yet you never saw it plunge decidedly into it, and immerge its whole body.

\* In a meeting of the Royal Society, February, 1793, proofs of Swallows retiring under water in Winter, were adduced. Fishermen in the Northern parts of the continent of Europe, who are obliged to break the ice to draw their nets, have drawn out of the Lake Samrodt sixteen Swallows at a time, and that Swallows are observed to be weak for several days after their first appearance. *Vide Derham's Physico Theology.*

Doctor Colar asserts that he has seen them very wet and weak, as if just come out of the water.

“ Let us now return: by the time we have called at the farm, and executed our commission there, the Sun will have set, and your father may have returned from his evening’s ride; to-morrow, if the afternoon is fine, we will renew our walk and conversation.”

## WALK II.

" But fast the storm increases, the strong flash  
 " Incessant gleams;————  
 " Round the dark throne, in awful Majesty  
 " The thunder marches: his imperious roar  
 " Shakes the proud arch of Heaven, and now the shower  
 " Begins to drop.————

*MRS. H.*—" Well *Frederick*, are you and your sisters ready for a walk,—which way shall we walk?"

*Emily.*—" To the garden, if you please mama, for the bees swarmed this morning, and *Philip* put them into one of the glass hives; I long to see them work."

*Mrs. H.*—" We should take noon, or early morning, for an observation of this nature: the hive is probably now as still and quiet as our house is, when its inhabitants are in their beds. I almost fear, by the look of the sky, that we must put off our walk altogether; that cloud which gathers in the west, portends a storm: we shall probably have both thunder and lightning. You look terrified *Eliza!* are you afraid of thunder?"

*Eliza.*—“ Yes, indeed mama, I feel such a sensation of terror when I hear it, that I am almost always tempted to wish I could hide myself somewhere, to avoid the sound; I know it is very-silly, but I think if I could run away I should be safe.”

*Mrs. H.*—“ You are, perhaps, unacquainted with the causes from whence they proceed, nor do you know the beneficial effect they have upon the earth?”

*Eliza.*—“ No, indeed, mama, I do not.”

*Fred.*—“ But I do, I have this morning been reading its causes and effects.”

*Mrs. H.*—“ Explain them my dear, and first tell me what occasions the thunder.”

*Fred.*—“ Why, mama, it arrives from certain *condensed vapours*, which are compressed within two clouds, one of which is, as it is termed *electric*, the other *non-electric*, and their bursting occasions the noise we hear, when the cloud that has no electrical matter approaches so near to the other, as that a spark flies from it and causes what is called a clap of thunder:

at every electrical spark, a fresh clap is heard, which is preceded by a flash of fire, or lightning."

*Mrs. H.*—"How is it then, my boy, that we do not hear the thunder as soon as we see the lightning?"

*Fred.*—"Because light moves quicker than sound; it travels as far in eight minutes, as sound in seventeen years."

*Mrs. H.*—"You are very correct, *Frederick*; I am pleased with your answers. Light, indeed, is almost instantaneous in its motion: for instance, when the gardener discharged the fowling-pièce, a few nights ago, we saw the flash of the gunpowder before we heard the explosion..... This is a tremendous storm indeed; I am happy to think we are sheltered from it, beneath a good roof. I should not be surprised to hear of a thunder-bolt having fallen, the thunder is so tremendous."

*Emily.*—"I do not know what you mean by a thunder-bolt, mama; what is it? are its effects dangerous?"

*Mrs. H.*

*Mrs. H.*—“ One question at a time, my dear. A thunder-bolt is, indeed, dangerous and terrible in its effects, which you may easily conceive, when I tell you that it is a solid, rapid flame, which descends, with incredible swiftness, from the clouds to the earth, and bears, down all opposition, destroying every thing before it; often do men, as well as animals, fall sacrifices to it: it overthrows large trees and buildings, and consumes every thing that comes in its way.”

*Eliza.*—“ This is, indeed, dreadful, mama, and I shall, after this, be more than ever afraid of thunder. You said it had a good effect upon creation, but these are most terrible.”

*Mrs. H.*—“ The effects of a thunder-bolt are, indeed, terrible; but thunder, unaccompanied by it, as well as lightning, are salutary, and necessary to vegetation.”

*Eliza.*—“ How so, mama?”

*Mrs. H.*—“ Because both thunder and lightning clear the air of noxious vapours,  
and

and destroy the insects which are engendered by them, and which would consume the produce of our fields and gardens; it also fertilizes the earth, in a great degree. Your fear of storms, *Eliza*, is childish; you have encouraged yourself in it, without having reflected upon the causes and effects of them."

*Eliza*.—"But, mama, you allow a thunder-bolt is dangerous, and how frequently do we hear of people being struck dead by lightning, or blinded by it."

*Mrs. H.*—"Not so very frequently, *Eliza*; take only England, for instance, during the course of the Summer, and upon minute enquiry, you will find that not more than two, at most, fall sacrifices to its effects. Careless people may expose themselves to great dangers. Many philosophical experiments have proved, that lightning is attracted by steel, and other magnetic bodies; and I have seen people hold keys in their hands to attract it. This, I think, was a daring and impious trial

trial of the power of the Most High; I would neither be timidly weak and fearful, nor bold and daring. I should moreover be cautious of wearing any thing that would attract its power toward me; thus you know during the heavy storm of thunder and lightning, which we had last week, I put my watch into the table drawer, because the chain was steel, not thinking it prudent to wear it; but your fear arises mostly from thunder: it is the sound of it (which I allow to be awful and tremendous) that terrifies you, whereas it is the lightning only that is dangerous, for the thunder which immediately succeeds, tells you that danger is over. You may easily ascertain the distance of thunder; for if you even reckon twenty pulsations between the thunder and lightning, you are half a league or a mile and a half from it. Learn to get the better of these fears; investigate causes, and then judge of their effects. But the storm begins to disperse; the evening will now be calm and composed."

*Eliza.*

*Eliza.*—“ In about an hour’s time the gravel walks will be tolerably dry; shall we then take a turn or two in the garden, mama?”

*Mrs. H.*—“ The Moon, by that time, will have risen, and short contemplations on the Heavenly bodies may afford us much pleasure. Meantime, let us observe the beauty of the meadow: I think I scarcely ever saw it in higher perfection; the colour of the grass, refreshed by the showers which have just fallen, appears more vivid and lively than ever; the Sun which now faintly beams beneath that cloud, throws its vivid rays upon part of the meadow, and the grass, from their reflection, looks as if it was spangled with brilliants. How sweet the air smells! how fresh! how reviving to the senses! the pasture for the cattle is luxuriant; indeed how much have we cause to be thankful to Providence, whose wonder-working hand resolves every thing into good, whose power pervades the whole earth, and regulates the great scale of creation.”

*Eliza.*

*Eliza*.—"Mama, how is rain produced?"

*Mrs. H.*—"By the *condensation of vapours*, which collect into clouds, and fall, by the assistance of the winds, upon the earth. No calculation can be made of the benefit of rain to the vegetable world. God Almighty, in his disposition of the elements, contrived them with such harmony, that they should all work together, for the general good of mankind. The heat of the Sun engenders numerous insects, which would make the air we breathe dangerous to exhale: noxious vapours also, arising from corrupt bodies, and a variety of other circumstances, are destroyed and cleared by means of this salutary element; it also moderates the burning heat of the atmosphere, when a succession of hot, dry weather has parched the earth with drought. Add to this, it nourishes the vegetable world, and invigorates the plants, by conveying to their roots such a portion of moisture, as is necessary to their growth and preservation.

Springs, rivers, fountains, and lakes, are much indebted also to rain; they originate partly from, and are greatly supplied by it. In wet or rainy seasons we feel no want of water; but in a dry season, ponds, lakes, and even rivers, are dried up. Thus you see how beneficial rain is to the earth. You must have noticed how much the fruit increases in growth, after rain; and it was but yesterday the gardener complained that the pea-pods would not fill for want of it. Without rain the earth would be parched up, so as to prevent the growth of trees, plants, and animals; for as I have before told you, one thing depends upon another; so, without rain, there would be no grass for the cattle: they must perish, and we, as depending upon their lives for the preservation of ours, must also share the same fate. See! your father is coming; go and eat some gooseberries and cream, which have been prepared for your suppers; we shall, in the mean time, take a walk in the garden, where you may

join us for half an hour before your bed-time, and take that opportunity of gratifying your curiosity in enquiries respecting the Heavenly bodies."



*Mrs. H.*—"Well my dears, you have made great haste to rejoin me: you have presently dispatched your suppers."

*Eliza.*—"Mama, we hurried, because we wanted to hear papa's account of the Moon, which he promised to give us a long time ago."

*Mrs. H.*—"You will be disappointed, my dear, for the present, as Farmer Stubbins is dying, and his wife has sent to your father to pray with him."

*Emily.*—"I am sorry, indeed, but more on Mrs. Stubbins's account than ours. It will be a heavy loss, mama, she has six children,—has she not?"

*Mrs. H.*—"Yes, my dear, but as they are most of them are grown up, and are settled in the world, it will not be so severely

verely felt by his widow, as if they were infants."

*Emily.*—"But it is a severe loss, nevertheless, mama, to lose a good father; I am sure I should feel it so, were I to lose mine."

*Mrs. H.*—"It is, indeed, my dear, and I hope yours will be spared both to you and to me, for many years to come. There is but one consolation we can derive upon the loss of good parents, and that is, the consciousness of having acted as a child ought; the reflection of having fulfilled our duty to them while in life, will soften the pang their deaths occasion."

*Eliza.*—"Frederick is bringing a telescope."

*Mrs. H.*—"Poor boy! he will be disappointed; I am but a poor astronomer, still my best knowledge shall be at your services."

*Fred.*—"So I find my father is not here, and I have brought the telescope; I wanted

sadly to know what the meaning of those dark spots in the moon are?"

*Mrs. H.*—"The Moon, you know, *Frederick*, is by many, supposed to be a world, and inhabited; and those dark spots are conjectured to be seas and oceans; the lighter parts continents and mountains.

*Fred.*—"Do you believe it to be an inhabited world, mama?"

*Mrs. H.*—"I do, *Frederick*; for, considering the magnitude of the Moon, its nearness to our earth, its distance from the Sun, and other circumstances, I cannot conceive the Almighty has left it a desert. You know our earth is but a planet, which, in its place and time, moves round the Sun like the others. Is it not equally fair to suppose, that those other planets are inhabited as well as this? And I do think, as our earth is an opaque body, that it would appear, if viewed from the Moon, as that body, or some of the other planets do to us."

*Emily.*

*Emily.*—“ Is it not strange, mama, that the planets should be inhabited? it cannot be positively ascertained that they really are, can it?”

*Mrs. H.*—“ Certainly not! our knowledge in these matters must be very limited; it is entirely conjecture, for no one yet could arrive at the exact truth.

“ But this is a subject which requires more information than I have power to bestow; and you are, neither of you, yet of an age to be instructed in that branch of science, to which a knowledge of the planets, and their system, is attached.”

*Eliza.*—“ Still, mama, we should like to be informed respecting the Moon.”

*Mrs. H.*—“ The best and readiest method I can devise of making you, in some degree, conversant with its more immediate properties is, to tell you of its influence upon animal and vegetable creation.

“ She, as well as our earth, is, as you see, an *opaque* body, placed so near us as to give

more light than all the other planets and stars in conjunction. The bountiful Creator has so ordered it, that it shall, during its absence of light, supply the place of the Sun, by shedding its rays, and diffusing light around; but you see, and you feel, an essential difference: the Sun warms and increases to heat, even to scorching; and we are sometimes forced to seek for shelter from its beams, which, as they rise to their *meridian*, are too intense for our comfort. The light the Moon diffuses is mild, gentle, and placid: her appearance in Summer evenings refreshes the earth, and invigorates the plants; she has, also, a particular influence upon the tides, which are insensibly guided by the Moon. Many of the ancients assert for truth, that by her influence, the bodies of oysters, and other shell-fish, are increased or diminished, and that our mass of blood is so also. But however uncertain her uses may be, it is a positive fact, that eclipses are entirely calculated by her age. Her monthly revolutions,

tions, also, are of singular service in the divisions of time, and in measuring months. Toward the poles, that is, within the polar circles, the Moon, together with the Aurora Borealis, are absolutely essential to man's existence; they supplying the place of the Sun, and assisting him by the clear light they diffuse, to follow his ordinary occupations, which he would otherwise be unable to perform, in a country where, for six months, the invigorating beams of the Sun are never felt. But it is time to return to the house, and for you to repair to your bed chambers. Good night, my dear children."

## WALK III.

“ The daily labours of the Bee,  
 “ Awake the mind to industry.”

*MRS. H.*—“ I have broken in upon my usual plan, children, for the pleasure of gratifying your curiosity; make haste, therefore, and put on your bonnets; we will devote a short time to the garden this morning, and pass it in viewing the Bees.”

*Eliza.*—“ Thank you, mama, for this indulgence, we will be with you immediately; will not *Frederick* accompany us?”

*Mrs. H.*—“ Not now; his father has engaged him in the study, we must not interrupt them; but be quick! you have not much time at your disposal; in less than an hour your music-master will be here.”



*Mrs. H.*—“ Now you are ready let us walk, it is a delightful morning; how sweet the air smells! what a rich perfume is wafted by the wind from that bean-field on the left!”

*Emily.*

*Emily.*—“ Are those beans the same as we make use of at table?”

*Mrs. H.*—“ The same species, but not exactly the same kind; these are used as food for cattle during winter; sometimes, indeed, in seasons of scarcity, they are ground down, and substituted in place of flour for bread.”

*Eliza.*—“ Does it not make very coarse and disagreeable bread?”

*Mrs. H.*—“ It is darker in colour, and is somewhat smoother; but if the bean could be divested of its outward skin, the meal would be as white as oatmeal, but chaffy and unpleasant to the taste. We ought to be particularly thankful to Providence, *Eliza*, for raising up such a substitute as beans; how many thousands would be thankful for them, and think the bread they make a luxury. In many of the Northern parts of Russia, as well as in Norway and part of Sweden, the inhabitants (peasantry I mean) in Winter exist only upon bread, made from the bones of dried

dried fish and oatmeal mixed with the bark of fir.

*Eliza.*—“ I am sure I should starve there, I could not eat such bread as these articles must produce.”

*Mrs. H.*—“ Do not say you could not eat it; you never yet felt necessity, and you have no idea what want could force you to; but see, here are the Bee-hives, let us stop and examine them.”

*Emily.*—“ How busy they are, mama! every one is employed, what a buzzing they make!”

*Mrs. H.*—“ They are the truest emblems of a well-regulated community: not one but has its allotted task, which it fulfils with incredible alacrity.”

*Eliza.*—“ How much larger some of the Bees are than others!”

*Mrs. H.*—“ Those are the drones, or male Bees; they have no stings, but by the loudness of their noise, united with their strength, they frighten away enemies that might come to annoy the hive. The

drones

drones are totally under the regulation of the female Bees, who never suffer them to leave the nest till about two o'clock, at which time their labour for the day is done. You may then see them fly about to enjoy themselves, gathering honey for the nest, which these carefully deposit in cells made for the purpose; you have both of you seen a honey-comb; did you ever observe any thing more regular or more beautiful?

*Emily.*—“ Are all those little recesses the residence of the Bees ?

*Mrs. H.*—All those cells which you see, are arranged with the utmost exactness, and are filled with honey, extracted from various flowers, and brought home by this industrious little insect, in a bag nature has adapted for the purpose. This bag, which is placed in the hinder parts, is frequently emptied, and as frequently filled. These insects are never idle. Observe, my dears, every member of this little colony is at work: some are building their cells; some kneading the wax; some gathering  
honey,

honey, and depositing it in those cells; others are employed in the care of the young, while another set are repairing their little habitations. What a lesson does this insect convey to man! how does it instruct him in the value of time, and teach him so to employ every hour of life, that it may prove serviceable to himself and his fellow creatures. What can excite us more to activity and industry than the patient labours of this little creature? and shall we, endowed with reasoning faculties and powers, which have placed us at the head of creation, be outdone by an insect? shall we consume our allotted portion of time in supineness and indolence; or, by what is worse, giving up ourselves to vain and useless dissipation, while this, among the smallest of God's creatures, shall set us such an example of industry! think for what we shall have to answer at the great day of final judgement, if we wantonly waste and trifle away that invaluable portion of existence which was given for

for nobler purposes, for the mutual assistance of our fellow creatures, and exertions to render ourselves useful in our respective stations.”

*Emily.*—“ Our hives are much handsomer than those in Mr. White’s garden.

*Mrs. H.*—“ People in general keep Bees in straw hives, but I have preferred glass ones, because I did not wish to be necessitated to destroy them, as soon as they had filled their cells. I cannot help thinking it an ungrateful return for their labours, and the benefits they confer on society, to burn them when they can work no longer. Observe, now how they are flocking out of that nest,—it is a cast. A cast is less than a swarm. The parent Bees now see that their young ones are no longer in need of assistance from them, they therefore unite to drive them out of the hive; which is, in plain terms, to tell them they must no longer depend upon them for subsistence, but go and get their own bread.

*Eliza,* go and tell the gardener to bring a

shovel and key, and ring them. It is a strange noise to be sure, but it induces them to settle, and then they can be hived."

*Emily.*—"Mama, let me ring them—let me hive them."

*Mrs. H.*—"If you please you may ring them, but you had better let the man put them into their hive, as you, from want of knowledge and practice, may disturb them. The hive must be rubbed round with ale and soft sugar, and the sweetness induces them to stop and fix their abode in it. Every Bee knows its own residence, were it to go to another the drones would beat it almost to death; but see, they are settling upon the branch of that apple-tree; in what a cluster they hang! they are very heavy. *Emily*, your task is not over; the queen Bee has not settled yet. Oh! now, now, she too has fixed upon the same bough—your task is finished my dear, you may call the man."

*Eliza.*—"Pray let us stop, mama, and see them put into the hive."

*Mrs. H.*

*Mrs. H.*—“ We have already trespassed upon time, my dear, but I will, if possible, oblige you. Oh! here is *Philip* with the hive; now see how he shakes them off the bough—the queen Bee is alarmed—she flies to a little distance—I hope she will not go far—oh! *Philip* has her, she has settled again, the Bees are safely hived: to-morrow we will look at them again, and see what progress they make in their work. Bless me! we may yet stop a quarter of an hour, let us observe them further. All the eggs which are laid, are by the queen Bee, she is the general mother of the hive; from her eggs proceed small worms, which the working Bees feed with their trunk; this worm lies dormant for fifteen days, enclosed in a cell, fitted with a little wax lid, this is called a *nympha*, and when arrived at maturity, comes out a young Bee.

“ Bees have two horns to guard their eyes; their fangs and claws serve them in working, and a hollow tube or trunk with

which they pierce to the very bottom of the cups of flowers, assists them to draw up the honey into their bag. They have six feet; the middle ones are nearly in shape of a spoon, and furnished with hair, which enables them to retain their wax; with their fore feet they knead and work it into their cells, which are set apart for different uses. What cannot the wonder-working hand of the Almighty perform! how inimitably has he arranged every article of nature, and every proportion of men and animals! not a limb, not a member, vein, nerve, or artery, but has its particular use, its particular sphere of action. The more we see of nature, my dear children, the more we shall find to admire, to adore, and reverence in its great author, whose attentive care and ever-watchful solicitude for the preservation of his creatures, is proved by every circumstance which occurs; not a day, not an hour revolves, but serves to confirm us in the belief that God has made nothing in vain.

“ Yonder,

“ Yonder, *Eliza*, is your music-master coming in at the gate: return to the house, and by attention to your business, merit indulgence.”

WALK, WALK. "I order"

"The field yields all that frugal nature needs."

*MRS. H.*—"This evening we will devote to walking in the fields, which are now in the height of their beauty: observe the variety of hues they exhibit, the contrast of colours between the rye, wheat, pease, and that beautiful field on the right of the hill."

*Fred.*—"Why, it is a blue field: what grain does it produce?"

*Mrs. H.*—"It is flax, my dear, from which linen is made; but it goes through a long process before it is fit to be made into shirts and frocks."

*Eliza.*—"Mama, will you tell us the process of it? I should have had no idea that linen was made from a flower of the field."

*Mrs. H.*—"Every thing has its use, and is planted for our benefit; but we will bend our walk to the field itself, and survey it closer. Well! *Frederick*, take up that stalk

stalk; you see it grows between two and three feet in height, and bears small blue flowers, very simple and pleasing in appearance, but without smell. After these flowers are gone off, a small round head, full of seeds, supplies their places, which, when matured by the Sun, is pulled up by the roots, and put through a machine, with iron teeth, called a rippling comb, which takes off all the heads; these too are preserved either for sowing again, or making into oil cakes, to feed cattle.—The flax is afterwards tied up in shocks, and put into standing water, and covered with stones to keep it down, it lies till the outer rind is putrified; and is then taken out and spread upon grass to dry; then carefully taken up and sent to a mill, constructed for the purpose, where all the outer rough skin, or rind, is cleared away; it is then hackled, and made fit for spinning: after being spun, if it is to be made into thread, for use, it is bleached, otherwise it is taken to the weavers, and wove

into linen, and then bleached in grounds used only for the purpose. The better to do this, people attend, who constantly wet it, as soon as it is dried, and boil it very frequently in lye, to whiten it; it is then, you know, made up; but unlike most other things it has its use, even when no longer serviceable to wear: as rags it is bought by dealers, who carry it to paper-mills, there to assume another form. The process it then goes through is very curious.—First the rags are milled, till torn in small pieces, by which they are partly cleansed; they are then put in a trough, covered with water, mixed with a little oil of vitriol and manganese, to whiten: from this they are almost immediately washed, lest the vitriol (which is of a very *caustic* nature) should burn them; they are then beat to a fine pulp, and in this state put into a frame of strong wire, with thinner crossing it, as you may see by the indented marks on this piece of paper—look, my dears, and convince yourselves.”

*Eliza.*

*Eliza.*—“ Oh! mama, I see it very plainly, the thick wire is length-ways, and the thin across.”

*Mrs. H.*—“ The frame is just sufficiently high to retain the thickness of the paper, the superfluous parts running over into a receiver, prepared for the purpose; after that which is in the frame has been sufficiently drained, it is turned over upon a thick felt, and laid layer upon layer, with interstices of felt between each, to the number of twelve or sixteen; they are then gently pressed, to squeeze out the superfluous moisture, taken out, and laid to dry; they are now in the state in which we see blotting paper, so as not to bear ink. The next process is to size them, by dipping each sheet. Size is composed of isinglass, and other glutinous substances, reduced to a liquid. The sheets are then again dried and pressed, either cold, or with hot irons, which gives the glossy appearance we see in hot-pressed paper.

“ In wove paper, the wires, instead of crossing each other in lines, are woven together as cloth, and rolled till they become so smooth as to leave little or no mark on the paper.

“ Thus you see what an important use flax is of to us; without it we should want the comforts of linen, and be unable to communicate our thoughts on paper, or receive instruction from books. The flowers of flax you might probably have overlooked as unworthy your attention, and their want of smell might have induced you to throw them from you; but the greatest virtues may be enclosed within the most humble appearances: a good heart and well-disposed mind, is of more service to the community than the most beautiful face, elegant form, or splendid dress, unaccompanied by them. I should have told you that hemp is nearly of the same species, but grows considerably higher, and is applied to the purposes  
of

of cordage and very coarse linen.—I also omitted informing you, that the refuse of the flax, when it has been hackled, is called tow, and is used to make coarse linen, and for the use of surgeons in cases of fractures, &c.

We will now, as it is growing late, cross by the great-oak field, along the copse, home; by the time we return it will be nine o'clock, and time for you to go to bed."

*Fred.*—"Some of the large oaks on Farmer Derwent's estate are cut down, and the bark taken off—what is it for?"

*Mrs. H.*—"We shall reach his fields presently; I shall then see whether you are right or not; he is your father's tenant, I did not understand he had ordered any of the timber to be felled."

*Fred.*—"Mama, if we cross this field, we shall be presently there, and you can enquire whether my father gave orders for it."

*Mrs. H.*

*Mrs. H.*—“ I do not doubt but he did, my dear; Farmer Derwent would never do an action of this kind without his knowledge: but see, here is an oak tree, it is partly barked.”

*Emily.*—“ Mama, what use can it be to strip the trees of their coats? it gives them a very cold uncomfortable look.”

*Mrs. H.*—“ The bark of trees is almost as serviceable as the tree itself. Take up that piece of bark, *Frederick*; you see it has a very thick, hard, crusty coat, to look at. You are ignorant of its qualities, would not know its value, and think it useless; but this bark is very serviceable to mankind; without it the leather you wear in your shoes could not be tanned. It has very strong astringent qualities, which contributes so to close and fortify the pores of the leather, as to make them almost impervious to the wet. The skin of a beast, as it is immediately stripped off, is soft, and covered with a coarse hair:

hair: this is eaten off by means of lime, which is thrown into the pits, and when properly cleansed, the skin is again thrown into other pits, with this bark, which, in conjunction with other ingredients, renders it what you see. A tan-yard is disagreeable to the smell, but so wholesome, that it is reported in the time of the plague, tanners, and those within their premises, were almost the only people that escaped its effects.

“ This tree, you see, has several excrescences on it, they are called nut-galls, and are formed by little insects which lodge under its bark; this is the strongest astringent known, and with a solution of iron makes a black dye, which you know is useful for many purposes. It is also employed in making common black writing ink.

“ The bark, called Jesuits, or Peruvian bark, grows in the province of Quito, in the kingdom of Peru. The tree on which it grows is a good deal like our cherry-

tree: the fruit resembles an almond, but it is the bark only which is useful, having been found in medicine of particular service in strengthening the body after long illness.

“ The Bark of the Maho tree, which grows in Campeachy and Honduras (in South America) has such strong fibres, that it is twisted and made into cordage,

“ The Bark of the *Cascarilla*, another West Indian production, when burned, emits one of the finest perfumes imaginable.

“ *Cinnamon* is produced from the bark of a tree, which grows in the island of Ceylon, in the East Indies.

“ These you know are elegant and valuable spices, and are held in much estimation, not only in culinary performances, but also in perfumery and medicines.

“ There are likewise many others I cannot now recollect, but all have their uses, all are alike serviceable in promoting the comfort and conveniencies of man, and contributing to his ease, safety, pleasure, appetite,

appetite; and health; how much then, my dear children, how very much have we to be thankful for, when not a tree, shrub, or plant, are suffered to grow in vain, and even the bark of a tree, which to you appears useless and ugly, shall be endued with such powers. Nature, I again repeat to you, has made nothing in vain: it may not at all times be permitted that the eyes and minds of shallow mortals, should be able to fathom the depth of the riches of the animal and vegetable world; or be capable of ascertaining the exact and absolute use of every part of creation; it is enough for us to know, that, that wise and benevolent BEING, who called us into life, prepared and worked altogether for our benefit and use, so that we should gratefully receive, and thankfully partake of the blessings with which we are surrounded with moderation.

“ The evening now draws in, let us return to the house; remember, I invite you to walk with me to-morrow, if the weather

will permit, if not, we will spend our time in your father's study, should he have no objection; I will then shew you plates of the different trees of which I have been speaking."



*Eliza.*—"Mama, last night you said *cinnamon* was the bark of a tree which grows in Ceylon, I know that *nutmegs* grow in the island of Java—where do the *cloves* come from?"

*Mrs. H.*—"Cloves are the produce of the island of Amboyna, and the other Molucca isles; but the Dutch, anxious to monopolize the whole trade; caused every tree to be rooted up, preserving the seeds in Amboyna only. They grow on a shrub, not much unlike our bay-tree, which bears white blossoms that grow in tufts at the extreme ends of the branches; these buds are at first light green, then yellow, then brown. I need not tell you that they dispense a most exquisite and potent perfume,  
and

and are very pleasant to the taste, as well as being a most valuable spice.

“ *Mace* is the bark of the nutmeg tree, the nutmeg itself is inclosed within three cases, the first is good for little, the two others partake of the flavour of the nut, which, when divested of its shell, is obliged to undergo some particular preparation before it is fit for exportation.

“ Spices of all kinds are natives of climates, lying between the *tropics*; they require a great deal of heat, to bring them to perfection, consequently our climate is too temperate for them.

“ *Cassia* is said by many to be the coarser or outer bark of the cinnamon tree; others assert that it is an indigenous plant in Syria, Egypt, and Persia.”

## WALK V.

“Ye Botanists I cannot talk like you,  
 “And give to ev’ry plant its name and rank.”

*MRS. H.*—“Come children, as the evening looks rather doubtful, we will confine our walks to the garden: I dare say we shall find entertainment—where is *Emily* running?”

*Emily.*—“Mama, I have plucked my favorite flower, and *Eliza* and *Frederick* have each one for you also.”

*Mrs. H.*—“Thank you, my dears, let me see them:—a tulip, a sun-flower, and a lilly of the valley. *Eliza* the tulip was your choice, was it not?”

*Eliza.*—“Yes, mama, do you not think it beautiful?”

*Mrs. H.*—“I think it a very showy flower, my dear, but I own it is too gaudy, too staring to meet my taste. Its colours are lively; and many, I dare say, would agree with you in thinking them beautiful; but I cannot look upon it without  
 feeling

feeling regret, that the folly of man should squander away such vast sums upon the propagation of a root that only produces a flower to charm the eye; it has no smell, or if any, a very disagreeable one: to me it is a bold assuming flower, which courts the eye of day. I never see it without applying Mrs. Smith's beautiful lines:—

“ With bosom bar'd to meet the garish day,  
 “ The glaring tulip, gaudy, undismay'd,  
 “ Offends the eye of taste ———.”

“ It is true I pretend to no great deal, but I own it gives offence to mine; it is so like a beautiful woman, without one other virtue or accomplishment to make her respectable, that I cannot see it without making the comparison. Useless, frivolous, vain, and trifling, she sets herself forth to charm by the mere aid of a pretty face. While the meridian of her beauty lasts, she may please the eye, but believe me it requires something more than mere beauty to retain affection. We may look upon a fine picture to admire it, but we can do

no more; we cannot bestow our affections upon canvas: we may regard it for a time with admiration, but it has neither sense, understanding, or virtue, to excite us to love.

“ So it is with beauty; alone it cannot long retain its power over our senses; familiarised to us, it becomes no longer valuable, except it boasts in addition a good heart, virtuous principles, and an amiable disposition, we cannot then deny our esteem and affection.

Acquaintance, by revealing the character, enhances the value of such a friend or companion; but unaccompanied by these essentials, we have no stable foundation on which to build for happiness. The beauty which allured, fades as years accumulate, and no other resource supplies its place. Of how little consequence then are external charms, how uncertain their tenure! a trifling fit of sickness, the small pox, accidents, a thousand causes may arise to deprive us of this so much

much valued acquisition, and leave us regretting the want of those internal qualifications, which make beauty but a secondary consideration.

“ The tulip shines for a short time, glowing with all those brilliant and vivid colours which can attract the eye. Its reign is short and arbitrary, its so much boasted colours very soon lose their brilliancy, its leaves droop, fall off, and die. And what remains? a stem without strength or beauty, no longer able to support itself; it bends its body to the earth, and drops forsaken and despised.

“ This flower is so striking an emblem of many young women, whose whole delight centers in ornamenting themselves, and displaying their persons to every observer, purposely to be admired, that I never fail considering it as useful in pointing out the instability and shortness of that period of vanity, which misleads the senses, and leaves remorse and sorrow on the mind.”

*Fred.*—"Here, mama, I brought this sun-flower."

*Eliza.*—"Mama, I am sure that is a bold staring flower; it is of a deep yellow, and always courts the Sun."

*Mrs. H.*—"It is a flower that grows high and wide, the size of it is answerable to that of the leaves; my dear, do you think a small flower, upon such a stem, adorned with such leaves, would be uniform? How do you think a child's head would look upon the shoulders of a man?"

*Eliza.*—"Oh! mama, I did not think of that, I see I am wrong; but is it not a bold flower? as it turns to the Sun in every direction."

*Mrs. H.*—"I believe, my dear, it is a flower more sensible of the Sun's influence than almost any other that adorns the garden. I am no botanist, but can conceive that by the power of attraction, it is impelled to meet the Sun. According to my mode of thinking, it is an emblem of gratitude; the Sun is its benefactor, to which,  
with

with unfeigned homage and grateful respect, it bows; from that bright luminary it derives health and strength, and looks to it for protection and support. What is due to those who confer favors on you? are you not obliged to them? do you not feel gratitude to them? this flower is its emblem, it follows its benefactor till he is no longer visible, and then, in anguish at his departure, closes its leaves and looks no longer up; but when morning again restores him to its view, again it manifests its pleasure by turning anxiously and keeping him in sight, right gratefully expanding its leaves, as if saying, "see the benefits I have derived from your bounty, behold the comfortable apparel with which I am cloathed, and the stores from which I derive my support; receive my purest homage, oh! thou beneficent planet, and let the simple gratitude of a flower be acceptable to thee."

*Eliza.*

*Eliza.*—“ Oh! mama, I do wish I had plucked a Sun-flower, I feel ashamed of my choice.”

*Mrs. H.*—“ You have no occasion, my dear, at your age the eye is more generally engaged than the understanding. It is natural in youth to be taken by glittering baubles; you are not yet of an age to moralize upon subjects of this nature, or to feel them as we do who have arrived at maturity. The best lessons of wisdom are acquired by experience. Perhaps, when a few more years have passed over your head, fine cloaths and fine colours, may have lost their effect upon your senses, and you may think as I do.

“ Your's, *Emily*, is indeed a lovely little flower, what a delicate colour! White is the emblem of purity and modesty.—What a sweet perfume it dispenses! such as this is should woman be—retiring, modest, diffident, anxious rather to conceal than display her beauties; she should cultivate her mind, and enrich it with the firm principles

principles of virtue and good sense; she will then dispense a perfume that shall never fade, and will be preserved even when time shall have robbed her cheeks of their bloom, and her form of its elegance. Observe, my dear, how delicate is the shape of this little plant! look at the leaf, which shelters it from sight, and obscures it from the eye of the rude gazer; so it is with a truly modest woman: she shrinks from the eye of observation, her perfections must be drawn forth to view, she will never wantonly display them, but content within the shade of obscurity, lives happy.

“Genius and merit, however, can never be wholly hid from sight; they may for a short time be concealed, but some favouring circumstance at last brings them into notice, and they merit the praise they deserve.

“I am glad we did not walk, a heavy dew is coming on, we shall do well to return to the house.”

*Fred.*—“ What are the causes of dew ?

*Mrs. H.*—“ Dew is the sweat of plants, and owes its origin to the moisture they derive from earth, which being drawn out by the heat of the Sun, serves to loosen certain particles which attach themselves to every thing in the vegetable or animal world. The calmer the air during the day, the stronger the dew at night approaches. Behold how it falls upon every leaf and blade of grass ; what can equal its beauty as it spangles the earth with its drops.

“ Dews are sometimes wholesome, sometimes otherwise, according to the vapours which float in the air. Sometimes they fall upon the plants and cover them with insects, at others they descend like a soft shower, and supply the place of rain, refreshing the earth by their moisture.

“ It was formerly believed that dew was the sweat of the stars, and alchymists tried to convert it into gold, but this belief has proved erroneous ; dew, as I told you, origi-

originates from earth. See how the little dog's coat is wetted by it—your tippets too are damp, we will go in.

“The dew or night-falls, in the West-Indies, are particularly dangerous to Europeans. In our climate, indeed, we have no very fatal consequences to apprehend from them; but there the new comers are always desired to abstain from walking out when the dew begins to rise. To me this prohibition would be a great mortification, for from the burning heat of the atmosphere, it is impossible to walk during the day; the liberty therefore of enjoying the cool air of evening would indeed be a luxury. *Frederick*, do not put your hat in the chair, hang it upon a peg in the hall.”

*Eliza*.—“What are hats made of, mama?”

*Mrs. H.*—“I thought, *Eliza*, you knew they were composed of the skins of Beavers, inhabitants chiefly of North America, and animals which display a wonderful instinct as well as genius,—if genius

can be said to reside in creatures unendowed with reason. The sagacity of the Beaver is admirable, and displays fresh proofs of the Omnipotence of God, in directing creatures to perform tasks, not only with method and regularity, but with the appearance of art and contrivance."

*Eliza.*—"Mama, will you be so good as to give us a short account of them."

*Mrs. H.*—"The best account would be derived from a book of Natural History: your father has Buffon's, you need no better instructor."

*Eliza.*—"But it is in French, mama, and we have not yet advanced far enough to translate it."

*Mrs. H.*—"Well, as that is the case, I must give you a few particulars, but when I next go into town I will purchase an English edition for you."

"The hinder part of this animal (which is amphibious) resembles those of fishes; in its fore part it is like a quadrupede. It has a broad scaly tail, which serves it for  
a rud-

a rudder, to direct its motions in the water. In June or July these creatures form themselves into a society, by taking up their abodes on the borders of lakes or rivers. If their buildings are in danger of being damaged by the rapidity of the tide, or placed so as to be endangered by floods or falls, they dam up a part of the stream, so as to secure a quiet habitation for themselves; their houses are erected with the utmost art, with walls of at least two feet in thickness, and opening from each house to the water, as well as to the land; they also build them two or three stories in height, that they may change their residence, in case of floods, to a place of safety. These houses rise above six or seven feet above the water, and from twenty to thirty Beavers inhabit each.— They collect great quantities of provisions for winter, which they deposit underneath the water to bring up as occasion shall require. Their winter food is sassafras, sweet gum, birch, and ash; but in sum-

mer, they partake of all the fruits the season affords, which come within their reach.

“ The teeth of these creatures are particularly strong. With them they gnaw asunder trees as thick as a man’s arm, which they roll along to the place they have fixed upon to build on, and make pillars or beams to support their houses. Upon their tails they temper the clay, or potters earth, which they use for mortar.— Every one has a different task to perform, and all do it readily. They have an overseer, or watchman, who gives notice by a particular noise with his tail of the approach of danger, or tells them when to commence their labours; in short, every one of their concerns is managed with such admirable prudence and sagacity, that it is impossible to withhold our admiration of them. Their skins are very valuable, and make great part of our trade with North America. From them also we derive the drug called castor, which is indeed a valuable acquisition to mankind.

It is used in medicine, and esteemed efficacious in nervous disorders. There are also many Beavers which inhabit Russia, but those of North America are most valuable.

*Eliza.*—“ I admire this animal, mama, and shall long for Buffon’s Natural History, that I may read a fuller account.”

*Mrs. H.*—“ The more you read of this, as well as every other creature, the more it will teach you to lift up your heart to the Almighty, who has so wisely ordained every thing for the use of man, the most ungrateful of his creatures; who, although receiving numerous benefits from his hand, partakes, enjoys them, but without feeling a proper sense of gratitude towards their Divine Author, without considering the source from whence they are derived, and who frequently, by cruelty and injustice, provokes the patience of Heaven to see and to avenge. Nothing scarcely hurts me more, than to see valuable animals, whose life is to be spent for the preservation  
of

of our's, wantonly and cruelly tortured; is it not enough that they must bleed for us, without aggravating their sufferings by studied torments? it is a terrible reflection upon human feelings. I think, were an horse or an ox, to know its own strength and power; were it for one hour but endowed with reason, what an exquisite revenge might it not take upon its persecutors. But here again we may observe the wisdom of Providence, who has left them in ignorance of that, which to know, would render them useless to man, for whom they were created. But here comes your father, and Mr. Mortlake; good night; I shall expect your lessons ready before breakfast."

## WALK VI.

“ Mark we now a thousand things which spring from toil,  
“ Unsung before ———.”

*MRS. H.*—“ Where is *Frederick*? I propose walking to the sea shore; if your father will accompany us, we will take a boat, and visit that large ship which lies at anchor near us.”

*Emily.*—“ Ah! mama, I do think you are going to surprise us: you told us some weeks back, that you expected my uncle home almost hourly; is not that his ship.”

*Mrs. H.*—“ You have guessed right, *Emily*; I was preparing a pleasant surprise for you: your uncle is arrived, and lies in the Downs; as soon as your father and *Frederick* join us, we shall set off to visit him.”

*Eliza.*—“ Oh! I am so delighted; what a deal he will have to tell us; I shall long to be on board; is he not come from the East Indies?”

*Mrs.*

*Mrs. H.*—“ Yes, my dear; the ship is laden with pepper, cotton, and rice.”

*Emily.*—“ They are all plants, peculiar to the East Indies, are they not?”

*Eliza.*—“ I did not know that cotton grew.”

*Mrs. H.*—“ Cotton is produced from a shrub, which grows in Asia, Africa, and part of America, but is more peculiar to Asia. It is a podded fruit, that grows to the size of an apple, which opens and discovers a thick white down, that we call cotton. The seed is separated from the cotton by a mill, constructed for the purpose, so as that the seed shall fall on one side, the cotton on the other. A great deal is manufactured in India, into muslin, callicos, and for various other uses; some is brought into England, where it serves to employ many hands; and little children, less than you, *Eliza*, work in the manufactories, and help to support themselves. Some pick, and some spin: their employments are adapted to their abilities, and thus,

thus, at a very early age, they become useful to the community.

“ Rice, with which you are all so well acquainted, is the produce of Asia, and America. In Asia it is substituted in place of bread: large tracts of land are there cultivated with it, and it is a considerable article of commerce with us.— That grown at Patna, in the province of Benares, is esteemed the best; though that we have imported from South Carolina, in North America, is, in my opinion, equally excellent.

“ From the East Indies we procure diamonds, rubies, sapphires, and several other costly and valuable appendages to dress and luxury. The mines of Golconda furnish diamonds; those of Ava, gold and silver. Potosi, situated in the kingdom of Peru, in South America, furnishes abundance of silver; from Mexico, immense quantities of gold have been derived. Thus, take the whole globe, every place in it shall produce a something convenient

or serviceable for man. But let us now join your father; we may save ground, by crossing the field by the stile, and he is now in the path.



“ Well, *Frederick*, your uncle you see thought of you as well as your sisters: are you satisfied with your presents?”

*Fred.*—“ Perfectly so, mama.”

*Eliza.*—“ Mama, did not my uncle bring you a shawl?”

*Mrs. H.*—“ Yes, my dear, a very costly one; it is said to be composed of camel's hair, but this opinion is now found to prove erroneous, they being made of the wool of a peculiar kind of sheep, which is a resident of Asia.”

*Emily.*—“ Well, I should have thought it grew like cotton.”

*Mrs. H.*—“ Every article of dress is derived from either the animal or vegetable world: for instance, your cloathes, *Frederick*, were first wool, upon the back of a sheep;

sheep;

sheep; it was then called his fleece. When he was sheared, it was named wool; this was sold to the wool-staplers, who wash, dress, and comb it; it is then spun, and afterwards converted to different purposes.

“Silk is the produce of a little worm.—*Eliza*, you recollect last year you had some, which you unfortunately forgot to feed, and at last, by reiterated neglect, left them to perish. This was a very great crime; you know I told you, you should have neither sashes, or any article composed of their silk, for a twelvemonth; besides you lost the pleasure of watching their different transformations, and thereby acquainting yourself with a very material and agreeable part of natural history,”

*Eliza*.—“Mama, do not tell me of this circumstance; you can't imagine how I feel when I think upon it: I hate to reflect upon my negligence.”

*Emily*.—“Mama, I never noticed the silk-worm, tell us all about it.”

*Mrs. H.*—“ You know, my dear, I am always ready to give you every information in my power: they are a species of caterpillar; indeed, after they have escaped from their egg, they very closely resemble them, except in colour. They are fed upon lettuce and mulberry leaves, and change their appearance three times in less than a month. Nature has provided them with a bag, which contains a glutinous substance, as also a kind of reel runs that serves for their silk, which is upwards of fifteen hundred feet in length, and what is more remarkable, throughout this great extent it is a double. After its third change, which is chiefly in its coat, it spins a thick web, of the shape of an egg, in which it wraps itself and continues spinning and increasing the thickness of this bag till the means which supported it are exhausted. The silk on the bag is carefully wound off; the skin which composes the bag, after having as much silk taken  
off

off as will come, is carefully cut open and the worm no longer wears its original appearance, but comes forth an ugly, ill-shapen, torpid mass, called a *chrysalis*; this is deposited in bran, and after laying fifteen or twenty days longer, comes again to view as a butterfly. I should tell you that if these creatures are neglected, so as not to have their silk spun off in proper time, they will, shapeless as they appear, eat their way through the case which encloses them, and the silk which makes them so valuable, would be spoiled. In Italy these creatures form a particular branch of commerce: they are watched and attended with the utmost care; the mulberry, with which that country abounds, affording them shelter and provisions.— They form their bags by suspending themselves to the trees on which they hang in clusters. Of what then have we to be vain, while the field, the sheep, and a caterpillar shall provide us with the ele-

gancies of dress? what an humiliating thought! Man is obliged to the silk-worm for the cloathing he is so proud to exhibit. What dependant creatures are we; of how little to be proud, since this gown that I now wear, could I do so, were it not for these little insects? No! God Almighty has caused a reptile to contribute to my appearance. I owe it to him—what should I do if flax, hemp, and cotton failed—if the sheep supplied no more wool than would merely serve to conduce to its own preservation; or if there existed no such creature as a silk worm. These considerations operating upon a sensible mind, would effectually remove the silly pride of dress; it would also teach us our dependance upon every creature in creation; it would convince us that, although man is placed at the head of creation, as a creature endowed with reason and understanding, yet his obligations, even to a worm, are greater than he can return. What must they be, then,

then, to that all-wise and adorable Being, whose directing hand and boundless power formed all for him."

*Emily.*—" We owe many obligations to silk-worms."

*Mrs. H.*—" And to sheep too, my dear, for they not only furnish us with articles of dress, but contribute to our comfort by night; think how we should suffer with cold, even in our beds, if we were deprived of blankets; they, you know, are composed of wool; but this is not all, the sheep affords nourishment to the body, as well as assisting to cloath and comfort it, for after it has been shorn for a year or two, it is drove to market and sold, and makes its appearance on our table in the form of mutton: even the little lambs, which so delightfully frisk and play about, lose their coats in our service, as well as supply us with food. The Hog supplies us with bristles: the mane and tail of that noble animal the horse, is used in stuffing seats of sofas and chairs, and for filling matrasses; it

has besides many other uses I cannot now recollect. Let us now wave this subject. Tell me, what do you think of a ship? were you not surprised at a body of such magnitude being supported by water, and carried along by the power of the wind?"

*Fred.*—"I was indeed, mama; what occasions wind?"

*Mrs. H.*—"The air being set violently in motion by means of heat, occasions wind, which is sometimes very dangerous and terrible in its effects, and under the name of whirlwinds and hurricanès, does an immensity of damage. In the West India islands, the latter have had very dreadful effects; in the year 1780 Jamaica suffered very materially by one. Picture to yourself what it must be to see whole fields of sugar-canes whirled into the air, and scattered over the face of the country; the strongest trees torn up by the roots, and the workhouses which are built and fitted up for the preparation of their sugars, at immense expense, and which contains ponderous

derous weighty and heavy articles, such as copper boilers, and stills of several hundred weight, torn by the force of contending elements, and battered into thousands of pieces. Houses afford no protection to the unfortunate inhabitants; one blast is sufficient to tear away the whole roof, and the rain, which at these times pours down with a violence of which you can have no conception, threatens also to destroy them. Caverns and wells emit dreadful noises; and the pent air rushes from them with a violence no language can describe; nor is this all, an earthquake, horrible in its effects, uncloses even the earth, which opens in various places, and swallows houses, lands, and every thing, no place of security can be sought, or shelter found from this war of elements; yet even this most dreadful scourge of countries, tremendous as are its effects upon society, is not without its uses, and even blessings. The air, purged from every gross and impure vapour, becomes healthful; and climates, which from their

extreme heat, engender dreadful diseases, shall be for some time secure from their effects."

*Emily and Eliza.*—"We should not like to live in the countries liable to earthquakes."

*Mrs. H.*—"In certain parts of the world they have periodical winds, which are particularly named: for instance, the *trade winds*, which blow half the year in certain latitudes from East to West, the other half in a contrary direction; the *monsoons* which prevail in India at certain seasons; the *sirocco* or South, which prevails in Italy, is wind fatal in its effects to the human and vegetable constitution. The *harmattan*, which prevails in the months of December and January, and blows from the interior of Africa to the Atlantic ocean. This wind is of a particularly drying nature, and blisters the face and body; but its effects, though unpleasant, are not fatal, and often salutary, as no infection can be caught while it prevails, and it frequently  
stops

tops the progress of diseases common to, and generally fatal in hot climates.

“ But the *simoul winds*, which prevail in the desarts of Africa, and of which Mr. Bruce’s Travels through its interior, speaks very largely, is so sudden and dreadful in its effects, by raising up vast columns of burning sand, that unless the traveller throws himself down with his face to the earth, toward the North, he would be instantly suffocated. It passes in a few minutes, but has such an effect, even during its short continuance, that those who fall martyrs to it instantly mortify.

“ The affrighted traveller, with wild surprise,

“ Sees the dry desert all around him rise,

“ And, smother’d in the dusty whirlwind, dies.”

ADDISON.

“ Yet although winds are sometimes thus dreadful in their effects, the benefits that accrue to mankind more than compensate for the temporary evil. While our rivers and quays are loaded with the productions of other countries, while we de-  
rive

rive comforts, necessaries, and even luxuries, by their means, shall we complain of their power? No! there is no conveniency but at times may prove otherwise. We should then be disposed to meet all with resignation, and patiently submit to that which is unavoidable. 'Tis true, we cannot immediately discern the uses of the *sirocco* and *simoul winds*, nevertheless, though their properties, in some respects, may be obscured from us, yet the all-wise God, who made nothing in vain, in his regulation of the system of creation, doubtless saw they would fulfil some wise purpose, and produce some good end; which though perhaps unfathomable to us shortsighted mortals, yet works together for the general good."

*Fred.*—"Mama, I have been thinking what a deal of art and contrivance is necessary to the construction of a ship."

*Mrs. H.*—"A great deal indeed my dear, and many varieties of nature are necessary to complete it; thus oak and deal, iron, copper,

copper, hemp, flax, all contribute their aid towards its completion."

*Fred.*—" I know, mama, that hemp and flax serve to make the sails and cordage, and that oak and deal is also the produce of our country, where do they get iron and copper?"

*Mrs. H.*—" Iron and copper are both dug out of the bowels of the earth, which the Almighty has enriched with inexhaustible mines for our use. Iron is absolutely, as to its services, of more benefit to mankind than gold. By its help the land is tilled, so as to make it more abundantly fruitful; no mechanical trade could be carried into effect without it, and many could not exist. It is rendered soft and capable of receiving any form, by heat alone: it is the only metal over which the loadstone has any effect, and is attracted by it. Of this valuable metal most implements of husbandry are made, as well as those employed for other uses, such as nails, saws, hammers,

hammers, hatchets, bolts, bars, and in short a thousand others I cannot enumerate.

“Copper being dug, as I said, from beneath the surface of the earth, is cleansed by fire from its impurities, and by the same power is also rendered subservient to the use of man. Both these metals are so ductile, that they will admit of being drawn out, even into fine threads, when tempered by a proper degree of heat.

“Thus the earth may be considered as an immense magazine, or store-house, which contains inestimable treasures. How provident the arrangements of the Almighty! who has placed these essential articles of our support and comfort, so as that we shall derive benefit from them without any inconvenience, for the earth itself would not contain them were they placed above instead of below its surface. The quantity of room necessary for them would infringe so much upon the space allotted for the other productions of nature, that our preservation

servation might be in danger, but placed as they are so far beneath its surface as not to impede vegetation, we derive every advantage from them."

*Fred.*—"From the circumstance of being taken out of mines, Iron and Copper are called minerals."

*Mrs. H.*—"Tin, which abounds in Cornwall, is also produced in mines, which support many hundreds of people who reside within the bowels of the earth.—Many of them never saw the light, and numbers of them owe their birth to these dark regions; they are, in fact, a colony within themselves, seldom, unless impelled by necessity or curiosity, ascending from their subterraneous abodes.

"I believe I told you that gold and silver were taken from the earth; there are many other minerals with which you may sometime hence become acquainted; at present you are too young to understand their qualities."

*Fred.*—"Mama, you always told me to ask you any question I wished to know:

when you were describing the effects of hurricanes in the West-Indies, you mentioned the sugar-canes being torn from their roots—I did not know what you meant by sugar-canes.”

*Mrs. H.*—“ Why sugar, my dear, grows in canes somewhat resembling reeds, the hollow of which is filled with a sweet liquor, which is pressed out and boiled up two or three times, to prevent its fermenting. It is also clarified, by being thrown into lye made with wood ashes and lime; when cleared from all its imperfections it is put into moulds, where it coagulates.

“ *Sugar* we derive from the East and West Indies; slaves are employed in the manufacture of it, which is very laborious.

“ *Tea* comes from China and Japan. The Chinese, who are a very jealous people, will not admit a European within the walls of Peking, lest he should make himself acquainted with the methods they pursue to preserve it, and so have it in his power to rival

rival them, and spoil their commerce. They boast that they are in possession of two eyes, while the rest of the human race have but one."

*Emily.*—"How is that, mama? I am sure we have all of us two eyes."

*Mrs. H.*—"They mean to insinuate that they are the only people who profit by having a pair, or, in other words, that they are more clear sighted, more comprehensive and ingenious, than the rest of the world. They are undoubtedly very exact and curious in their imitations, of which the proof I will give is sufficient to convince you: a lady, with whom I was formerly well acquainted, a native of India, though born of European parents, sent by the Captain of one of the trading vessels, a shoe which had a small *darn* in it, as a pattern for others which she wanted to be made. When the commission was executed, and the shoes came home, not one of them but were darned in the same place, and in the same manner as the one she had sent. You may

suppose she was not very well pleased with their extreme exactness; but as there was no remedy, she was obliged to endure it, however unpleasant a mended shoe was to her sight. As I am a little fatigued with the length of our walk this evening, and your father will be waiting for his supper, we will return home.

## WALK VII.

“ ——— every object of creation,  
 “ May furnish hints to contemplation,  
 “ And from the most minute and mean,  
 “ A virtuous mind may morals glean.”

GAY.

*MRS. H.*—“ So much rain has fallen within the last four and twenty hours, that we must confine ourselves to the garden, the fields and shrubberies will be too damp for us to venture in them.”

*Eliza.*—“ When is the new chimney-piece to be put up in the drawing-room, mama?”

*Mrs. H.*—“ I don't know, my dear, but soon I suppose. The masons I see are bringing in their tools, and making preparations to begin; do you know that marble is taken from the earth? it is dug out of grounds which are esteemed very valuable by their owners, and indeed are truly so. Marble is not only very beautiful and ornamental, but serviceable. It is a remark-

ably hard substance, very difficult to work upon and polish; at first it has a very coarse rough appearance, but it admits of a very fine polish, which is performed by rubbing it with a piece of its own substance and mason's dust. This operation is, I believe, only preparatory of that which is to follow; for it is only after having been some time under the hands of the workmen that it comes out with that beautiful smooth glazed look which so much attracts the eye."

Slate also is dug from quarries, as is Freestone, Lime-stone, and Portland-stone; of which great quantities are brought from Purbeck and Portland, in Dorsetshire.—To Scotland are we indebted for the stones with which the streets of London are paved. There are many species of stone, all of which have their different uses. At some future time we will enquire into them.

"What a smoke arises!—oh! it is the gardener burning weeds.

"Even

“ Even weeds are useful : when burned they are mixed with a certain quantity of lime, and are thrown upon the land to manure it. In places situated on the coast, they gather the sea weeds for this purpose; which when burned and mixed, are called kelp: they are also very serviceable as manure.”

*Eliza.*—“ Oh! mama, I have been so frightened! such a spider was crawling upon me! did not you hear me scream?”

*Mrs. H.*—“ No, I did not indeed, my dear, and if I had, should probably, instead of pitying you for the terror you sustained, have blamed you for giving way to such unpardonable weakness. Pray which do you think was the greatest object of terror, you to the spider, or the spider to you? I dare say it ran from you as fast as it was possible. Suppose a spider could speak, and suppose it with its parents, it would probably say—“ Oh! mother, I have seen such a great ugly thing, higher than either of the bushes, upon which we spin

spin our web; it had such large globes in its head, and two such arms, with narrow strong spikes at the end! and it made such a frightful noise, though I am sure I hardly touched it, and indeed should not willingly have approached had I not dropt on it by accident. I am frightened when I think of it." To say the truth, *Eliza*, the spider had more cause to be terrified than you; you could crush it with a touch, but it could not hurt you. We have no *tarantulas* in England. See, here is a spider, I will take it up; I am no ways alarmed at it. If I have my microscope in my pocket we will examine its form.—I have it; shall we look at the poor creature? Come, *Eliza*, you shall be the first observer—do I hold it so as you can examine it accurately?

*Eliza*.—"Yes, mama; It has six eyes, they are all in the front of its head, but it has no neck, it is cloathed with hair; what a bag of black ugly looking matter it has on its back! and it has six legs too, mama."

*Mrs. H.*

*Mrs. H.*—“ Well, *Eliza*, now you have examined it, let me see; it has indeed, six eyes; but some spiders have eight, others four, for how would these creatures be able to dart upon their prey and seize it as it does, by assault, if their eyes were not placed every way? for, being deficient of a neck, they cannot turn their heads like other creatures; Providence, therefore, to remedy the defect, has supplied them with eyes that look every way, and increased, for their convenience, the number of them. That frightful black bag contains the means of making its web; in some it contains a poison, yet this very poison has been proved an antidote in many diseases. In warm climates, I believe, spiders are in a greater degree venomous than in more temperate regions.— The *tarantula* of Italy has very fatal effects, unless counteracted by the power of music upon the senses; but observe, children, the regularity with which it forms its web, see the exactness with which every thread

thread is placed, and the equal distances and proportions they bear to each other; yet with all the recommendations its neatness gives, it is a treacherous, subtle, cruel tyrant. See how it decoys that thoughtless fly into its web; observe how artfully it conceals itself from view, while the poor flutterer in trying to escape gets more and more entangled in the maze so artfully spread for its destruction. Now see the eagerness with which it darts upon its captive, and makes it pay its life the forfeit of its temerity.

“ Let us, for comparison’s sake, suppose the spider *man*, its web the *world*, and the fly an inexperienced *youth* just entered into it; let us follow him in idea through the scenes he calls pleasure, but which in effect are antidotes to it; see him plunging headlong into the web dissipation has woven for his destruction; view him so entangled in its threads that he can no ways escape from them; his health, interest, reputation, honour, fall sacrifices. Convinced of his  
error

error he struggles to break the bands which confine him. Vain endeavours, fruitless struggle! Thoughtless youth, you should not have tempted danger so far, you should have escaped the web e'er the threads enclosed thee on every side. What avail promises and resolutions; without character, without friends, without money, thou art lost; man thy devourer, thy bane, thy betrayer, who lured thee to ruin, flies, renounces thee, thou art inevitably lost, nothing can save thee, no exertions thou canst make have now power to redeem thee from the abyss into which thou art plunged. But, to pursue this metaphor still further, let us suppose the unfortunate youth, despairing of hope, resigning himself to the fate which awaits, and in the moment when every dependance has forsaken him, see him liberated by some unknown friendly hand, who in pity of his youth and inexperience makes an effort to snatch him from inevitable destruction. Restored once more to health and liberty, convinced by  
the

the past that the ways he formerly pursued, lead only to destruction, he adopts other methods, becomes a different being, and, blessed again with reputation and character, he looks back and rejoices at his past escape. In vain are nets now spread to entangle him; his feet are no longer to be betrayed into them; firmness and consistency now mark his pursuits, he rises into respect, and becomes in turn a monitor to the heedless and unwary.

“ Oh! here comes *Nanny*, what does she want? I am sent for by your father, I will rejoin you presently.”



*Eliza*.—“ Mama, what have you brought us in that tumbler?”

*Mrs. H.*—“ I have brought you a very remarkable production of nature, which partakes both of the animal and vegetable kingdoms—it is a polypus.”

*Eliza*.—“ A polypus, what’s that? where does it grow? what sort of a thing is it?”

*Mrs. H.*

*Mrs. H.*—“ I told you it partook both of the animal and vegetable kingdoms; it is found among rocks adhering to them, and is properly termed a *zoophite*, or animal plant; it is one of those links which attach the animal to the vegetable world. Upon the least touch it adheres so firmly to the rock to which it fastens itself, that it cannot be separated from it.

“ But there are other kinds of polypuses with which time will make you better acquainted. There are many varieties in zoophites which partake of the nature of a particular class; thus some, as the one I have in the tumbler, certainly belongs to fish; others there are which belong to birds, and some to flowers. The truffle is also an animal plant which is generally hunted by dogs. It lies a short distance below the surface of the earth, to which the dogs are directed by their scent; the hunters then dig it up; it must be dried before it is fit for use, and is used chiefly for culinary purposes; but I cannot enu-

rate the different varieties of these species of plant, I merely mention them to convince your senses of the gradation that lies between man, the head and lord of creation, and the plant which grows beneath, and which he tramples under his feet.

“ The *Orang-Outang*, or wild man of the woods, approaches nearest to the human figure, and connects man with beasts; the Bat, which resembles the mouse as well as a bird, connects animals with the feathered race; the Flying-fish connects birds and fishes; and the Polypus, as well as others of the zoophite race, serve to connect the animal with the vegetable world. Beasts, birds, fish, insects, and plants, have each their different properties, peculiar only to themselves, and which make them all serviceable to creation. Thus food, upon which we could not subsist, grass for instance, nourishes the cattle. Many plants, which to us appear useless, have their peculiar advantages, and serve as medicine. Thus hemlock, the deadly nightshade,  
and

and others, are frequently used for that purpose. Others, that are merely ornamental in our hedges and fields, afford sustenance to birds. Even insects, such as spiders, ants, caterpillars, gnats, and flies, serve them for food. Were it not so, we should be overrun by a multiplicity of these creatures, which would prey so severely upon the produce of our fields and gardens, as to deprive us of the benefits they confer upon us. On the other hand, the birds, deprived of these creatures for food, would be equally troublesome and burdensome; but regulated by the wise providence who governs all, we have no further use of these creatures than is absolutely essential for us.

“ Observe how wisely and affectionately the great Creator has ordained every thing for us! what should we do if there were as many beasts of prey as human creatures? or if he had endowed them with the gift of reason, we should inevitably fall sacrifices to them. Our superiors in strength and fierceness, they would add cunning,

and oppose art to art; the wiles we set to catch and destroy them would be of no avail, as reason would teach them to counteract our plots, and lay others for our destruction: but now, arranged as every thing in nature is, we oppose our reason to their strength and fierceness, and we derive benefit from them: thus the lynx, fox, bear, and wolf, as well as many others, furnish us with the furs which we find so comfortable and useful in winter. The camel, horse, ox, and elephant, are serviceable as beasts of burden; the dog guards our property by night, or directs us, by the quickness of its scent and sagacity, to find game, such as hares, partridges, pheasants, woodcocks, &c. the cat prevents the devastations of rats and mice; the beaver and otter are serviceable to our clothing; the feathered race not only contribute to supply our tables with luxuries, but afford us their feathers to repose on; the fish contribute also to our store of comforts, by presenting us wholesome and  
nutri-

nutritious food, and also supplying us with oil for our lamps; their bones also are, by preparation, reduced to a species of soap, and assist in cleaning our linen and houses. The whalebones, with which your stays are made, had once a place in the jaws of a whale. Ivory we owe to the elephant, their teeth supplying us with that valuable article. Tallow is also made from the fat of animals, in short, for every thing we wear, or eat, or use, we are indebted either to the animal, vegetable, or mineral world."

*Eliza.*—"These are really matters of weighty consideration."

*Mrs. H.*—"A reflection of this nature should be sufficient to set aside the silly pride of dress, and the false and mean consequence we are apt to assume from it.—Man in his original state is the most helpless of all animals; for months after his birth, his lips cannot utter a sound by which we can distinguish a positive meaning; his feet refuse to walk, and his hands are

unable to perform their functions; but, as the years of helpless infancy pass over his head, and his reason begins to exert itself, his mind and faculties expand, his ideas enlarge, and as he advances to maturity he gains the habits as well as powers of reflection; that reason, which is the "first best gift of heaven," lifts him above the brute creation, and instructs him how to employ it in useful and benevolent acts of kindness towards his fellow mortals, and of appreciating the bounties of his CREATOR, who gave him such uncontroled dominion over the beasts of the forest, the birds of the air, and fishes of the sea; who instructed him in the best ways to secure his preservation and add to his comforts; whose arrangements of the universe was such as to conduce to his temporal felicity, and who, above all, endowed him with a soul to inherit eternal felicity. Thus thinking over the immense debt of gratitude due to the Almighty for his protection and care, retire to your bed-rooms, and in ardent

ardent prayer for the continuance of his blessings, close this and every future day of your existence—good night my children.”

## WALK VIII.

*MRS. H.*—“Well, my dears, it is rather late this evening, I fear our walk must be contracted, but the day has been so uncommonly warm, and so little air has been stirring, that I have had no inclination to move till within this half hour.”

*Eliza.*—“Indeed, mama, I never felt the heat so oppressive, I dare say the hottest day in the East or West Indies could not exceed it.”

*Mrs. H.*—“I believe you are mistaken, my dear, the Sun you know is vertical twice a year to the inhabitants of the torrid zone; do not you think they must suffer considerably more by having its beams darting directly on their heads, than we, who have only the reflection of its rays in an oblique direction? we can form no idea of what they endure from the heat, which is frequently attended with very fatal consequences: many have died with  
what

what they call a *coup du soleil*, which affects them with instant madness and death; even dogs and other animals have been known to experience this disorder; but these are rare instances, for Providence, with that justice which he dispenses so equally to all mankind, has formed men, whose habits are fitted for the climate in which they exist, with fruits so adapted to it, that they would not arrive at any degree of perfection with a less degree of heat than that to which they are exposed. Sugar, spices, rice, medicinal plants, gums, and trees; the *cocos-cocaos*, plantain bread fruit, tamarinds, for instance, and a great many others, would not bear fruit in more temperate climates. The inhabitants of the tropics feel as much from cold, and more, than we do from heat. Thus man is fitted for the place in which he draws his breath; the Laplander, Norwegian, Kamschatdale, each think their climate and soil the most preferable; and such is their attachment to it, that they seldom

seldom or ever emigrate, and are sure at length, if life is spared them, to return to their native soil, though to us, born in a clime which produces every thing desirable and necessary for man, the idea of returning from plenty to subsist on the flesh of seals, dried fish, and the use of oil, would be terrible; yet such is the love this hardy northern race bear to their country, that they prefer it to all the luxuries and riches more southerly climes produce. Not that only to these peculiar people are local affections confined: the inhabitants of the Southern Ocean, the natives of Caffraria, and our still nearer neighbours, the Swiss, are no less sensible of this love for their country. Omai, of whom you have read such a particular account in Capt. Cook's voyages, though flattered, carressed, introduced at court, and respected and patronized by the chief of the nobility, yet sighed for home; not all the pleasures with which he was surrounded, or the gaieties which courted his attention, could detach his

his thoughts and wishes from home, and the humble joys he there experienced.—Take a Hottentot, when a child, from his country, rear him and educate him with care, and when arrived at man's estate, leave him to pursue his own plans and wishes, he will return to his *kraal* and his hut, and again naturalize himself among his countrymen.

“ The Swiss, who were formerly let out as hired armies to different states, have been known to desert from their duty when the simple melodious air of “ *ranz des vaches*” has been played or sung, and returned to their native mountains. A man's country is his home. After long toils, cares, and pains, the wearied spirit looks to return to that circle, that spot, where first the ideas began to expand, and where the first wishes and attachments were formed; thus you see that the climates of the burning torrid zone, and the frigid poles, may be more congenial to a man's feelings and happiness than any other which  
abound

abound with twice the luxuries and elegancies of life."

*Emily.*—"I do not doubt, mama, but every one loves his own land best: for my part, I think there can be no place like England. I think I could endure a cold climate better than a hot one: and I often wonder how people can support themselves under such intense heat; the inhabitants of Goree, and those immediately under the line, must be almost scorched to death."

*Mrs. H.*—"Providence, my children, is equally as attentive to the comfort and health of the sooty sons of Africa and South America, as to those of more temperate climates. Their excessive heats are tempered by breezes which blow alternately from the sea and the shore, and render their climates endurable."

*Eliza.*—"But extreme warm weather, such I mean as we have to-day experienced, is not reckoned wholesome, is it mama?"

*Mrs. H.*—"I believe not altogether so to the human frame; many disorders, even

in

in these climates, owe their origin to extreme heat, and people who live intemperately are generally sufferers; but these are partial evils: without heat the grain upon which we chiefly depend for sustenance would not come to maturity."

*Eliza.*—"What! should we not have corn without this hot weather?"

*Mrs. H.*—"Nor Rye, Oats, Beans, Peas, or Barley. This Sun, however fervid its beams, and uncomfortable to our feelings, is yet the greatest blessing the Almighty can bestow upon us; for without its influence our fruits would want their sweetness, and neither vegetables or any thing else, produced in the gardens or fields, would arrive at perfection. We should therefore learn to bear partial evils and temporary inconveniences with patience and submission, convinced that every dispensation of Providence is guided by wisdom and love of his creatures."

*Emily.*—"I can easily believe that, mama, but tell me which you think you could best endure, cold or heat?"

*Mrs. H.*—"I can't say, my dear, I have never felt either in that extreme degree to judge accurately. The intense cold of the polar circle, I believe by all accounts I have heard and read, to be most intolerable; out of sixteen men that were left to winter in Greenland, only two survived to return to their native country; it is no uncommon thing in these northern climes for travellers to have their fingers, toes, and even noses, drop off by being frozen. Every thing they eat or drink is obliged to be thawed before it can be used; even *brandy*, the strongest of all liquors, freezes, and by freezing loses its spirit."

*Emily.*—"I think then, mama, cold is worse to bear than heat."

*Mrs. H.*—"Cold has one good effect; it braces the nerves, and strengthens the body, while extreme heat creates weariness, languor, and lassitude. The inhabitants of southern and westerly climates are generally an indolent and effeminate set of beings; while those whose nerves and muscles are early braced by a keen air, are generally

nerally active and vigorous. Much may be said in defence of the indolence of the Asiatics, Africans, and South Americans; their soil, highly luxuriant, produces all the necessaries, and even luxuries of life, with scarcely the trouble of cultivation; but the frost-bound earth of the frigid zones, requires the labour of man to make it capable of receiving and producing the seeds upon which they depend for support: thus exercise and toil contribute with their climate to give vigour to their bodies, and such is the effect of pure and keen, as well as wholesome air and exercise, that Norwegians and others inhabiting the frigid zones have arrived at such a period of longevity, as to be tired of life, and request to be carried to a part of their country less friendly to the constitution."

*Fred.*—"Towards the poles, mother, I believe they have six months winter."

*Mrs. H.*—"Yes, my dear, for six months the sun never appears above the horizon, but the Aurora Borealis supplies

light to the Laplander and others during that period."

*Emily.*—"What is the Aurora Borealis, mama?"

*Mrs. H.*—"I believe that has never been exactly defined; but it is that great northern light which moves, or appears to move, in various directions in the air: it proceeds directly from the poles, and appears as bright transparent clouds in the sky, from which rays of light dart. It is ascribed to different causes: some naturalists suppose it to arise from nitrous frozen particles, which rising and imbibing the oily exhalations from those immense carcasses of fish that are found only in the frozen circles, are thereby luminous; others say its origin is derived from magnetic substance which reflects light to a great distance. Formerly it was a received opinion that these lights were the heralds of many troubles; that in some cases it predicted storms at sea, in others war, according to the ignorance or heated imaginations of the observers.

observers. Not a few pretended to discover fighting armies in the air, whence was predicted the troubles which were to follow. Of this we are sure, that in the absence of the Sun, during the long winter night experienced at the north pole, this light, let it originate from what cause it may, or be considered as a prophet (whether faithful or not I cannot pretend to tell), is as great a blessing as God Almighty can bestow to soften the hours of darkness: without it the poor Laplander would be unable to pursue the few avocations winter affords him; he, then, is thankful to Providence, whose goodness has shed a light over his benighted way.

“ But come, the evening draws in rapidly; see, already are the heavens bespangled with stars: what a glorious company! how beautifully bright they appear! look, my children, and admire their radiance; that star, which seems so much longer and brighter than the rest, is Jupiter; it is properly a planet, and for half

the year is an evening, and the other half a morning star. Venus, another planet of equal, indeed I believe superior, brilliancy, acts in conjunction with him: thus, when one is a morning, the other is an evening star. There are also several other planets, which perform their revolution round the Sun; even the earth which we inhabit is one.

“ It is beyond the depth of human comprehension to conceive the size of the different planets: the Sun, which is the center, is more than a million times larger than our earth; round this center move seven other planets, and their twelve moons, or as they are called, Satellites, which receive light and heat from the Sun, and which there is every reason to believe are like the earth we inhabit; worlds containing creatures like ourselves, and dependent upon the protecting providence of God: according to their distance from the great luminary of light, they require time to perform their journey round him.

“ Astronomy

“ Astronomy is a delightful study, it raises the mind, and exalts the ideas to the Deity, who dispenses the blessings of light to us, when the Moon is no longer perceptible: the stars by their effulgence supply her place, and give light in her absence to this our world.

“ What can look more beautiful than does that calm serene sky, spangled with gold and diamonds? tell me, do you think Art, employed on the most costly dress, can equal the glorious scene before us, either for richness, beauty, or elegance?”

*Emily.*—“ No, mama, nothing can exceed the beauty of the sky, as it appears just now; but mama, pray tell us the names of the planets—can we see them all?”

*Mrs. H.*—“ No, my dear, the Georgium Sidus, and Saturn, which are the most distant of all the planets from the Sun, are visible only at intervals, to the naked eye. I have seen Saturn through a telescope, and it then appeared as large as the Moon at full: this planet is attended by five  
Moons

Moons or Satallites, which likewise perform their revolution round the Sun.’

*Emily.*—“ Why round the Sun in particular ?”

*Mrs. H.*—“ Because, as I told you before, the Sun is the center, as well as largest of all the planets, and diffuses its warmth to them; they are therefore said to revolve round it. The names of the primary planets are, Georgium Sidus, one but lately discovered by Dr. Herschel; Saturn, Jupiter, Mars, the Earth, Venus, and Mercury; Mercury is the nearest to the Sun, therefore is generally invisible; he is also a small planet, therefore we do not much miss his brilliancy. Venus is the next, and a very bright and beautiful star she appears.

“ Next comes our Earth, with the Moon; Jupiter with his belt cuts a very splendid appearance.”

*Emily.*—“ Mercury, you say mama, is the nearest planet to the Sun; which is the farthest removed from it ?”

*Mrs. H.*

*Mrs. H.*—“ The Georgius Sidus, whose distance is eighteen-thousand-million miles from the Sun, and takes eighty-two years to perform its revolution round it. The Moons or Satellites, as they are termed, are smaller and less brilliant bodies, but all contribute to adorn the celestial hemisphere, and enlighten the earth. The Stars which are nearest to us, appear the largest, they are therefore denominated Stars of the first magnitude: those of the second and third, to the sixth, appear smaller in proportion to their distance.— Strange as it may appear to you, who, now doubtless see, according to your belief, millions of stars, yet not more than a thousand are visible to the naked eye; they multiply to your sight by reflection only, and the confused manner in which you regard them. Astronomers, however, by the help of telescopes, have discerned upwards of three thousand, which are thence called telescopic stars, because invisible without the assistance of one. I  
will

will take you some evening on a visit with me to Dr. Langley's, he will, perhaps, permit you to go into his observatory, and let you look through his telescope at the stars."

*Fred.*—"Let us go to-morrow, mother, I should be quite delighted to hear him explain these subjects to us."

*Mrs. H.*—"You are so young yet, my boy, that I fear the Doctor would not judge your understandings sufficiently matured to comprehend the explanations he would give; we will, however, visit him very shortly."

"But to continue our subject—On a clear winter's night, the heavens present innumerable stars to our view: fixed stars are distinguished from planets, by being less light and brilliant, and by a certain twinkling which we discern in them."

*Emily.*—"Why do they call them fixed stars, mama?"

*Mrs. H.*—"Because they are always stationary as to place: now the planets, by their revolution, must change theirs."

*Emily*

*Emily.*—“Mama, which of the stars are nearest to us?”

*Mrs. H.*—“Sirius, or the Dog Star, which is the longest in appearance.”

*Emily.*—“Have all the stars certain names?”

*Mrs. H.*—“Astronomers, or rather the Ancients, even so far back as the time of the Egyptian Shepherds, either for amusement, or from the effort of a fanciful imagination, regarded the situation of the fixed stars, and assisted by fancy, formed in their different positions the figures of certain animals or terrestrial objects. Thus the great Northern constellation is called *Ursa Major*, or the great Bear; the peasantry of our own country, indeed, call it the Plough, the figure of which it may as easily represent as that of a great Bear. The little Bear is only two degree from the pole. The *Canus Major* and *Minor*, the great and little dog. The *Hesperides*, or morning star, so named by poets. Orion, who is called the stormy, because it is generally

generally considered as appearing most visible in stormy tempestuous weather; and Sirius, which is during the months of July and August, enveloped in the rays of the sun, and therefore gives name to the dog days. In short, skilful astronomers distinguish every star, and planet, by a proper name, and can tell their exact places in the heavens."

*Emily.*—" Stars add much to the beauty of the heavens; even the moon, when at the full, is less beautiful than the sky when bespangled by these little luminaries."

*Mrs. H.*—" The stars certainly contribute to the beauty of the hemisphere, but that would be a poor and solitary merit, had they not others, far superior, to boast. They serve us during the absence of the moon, to illuminate the path of night, and by their aid prevent the traveller from falling into dangers he might from want of light otherwise encounter. They also inform the farmer when to sow his seeds, that they may produce in proper season:  
they

they guide the mariner also across the pathless deep, and serve as a pilot to guide him on his way. Thus you see what the watchful providence of God has done for us: what wonders his affection performed for our security and comfort; and while you gaze upon the myriads of stars which deck the heavens, ever let your hearts be lifted up in praise, reverence, and love, to their divine original; I never see them without thinking of that beautiful Hymn of Addison."

*Eliza.*—"Which do you mean, mama?"

*Mrs. H.*—"The spacious firmament on high,  
 With all the blue ethereal sky,  
 And spangled heavens, a shining frame,  
 Their great Original proclaim.  
 The unwearied Sun from day to day,  
 Does his Creator's power display,  
 And publishes to every land,  
 The works of an Almighty hand.

Soon as the evening shades prevail,  
 The Moon takes up the wonderful tale,  
 And nightly to the listening earth,  
 Repeats the story of her birth:  
 While all the stars which round her burn,  
 And all the planets in their turn,  
 Confirm the tidings as they roll,  
 And spread the truth from pole to pole.

What though in solemn silence all  
Move round this great terrestrial ball?  
What though no real voice nor sound,  
Amid their radiant orbs be found?  
In reason's ear they all rejoice,  
And utter forth a glorious voice,  
For ever singing as they shine,  
"The hand that made us is divine."

"It is now time to return to the house:  
we have exceeded our usual time, and  
your father will be waiting for his supper—  
good night."

## WALK IX.

*ELIZA*.—“ Mama, I was so frightened last night after we left you, I was looking out at the window, across the field by the marsh, and I saw a light flame play about the bushes and trees.”

*Mrs. H.*—“ Well, my dear, it was nothing to cause alarm; it is called *ignis fatuus*, and, by the country people, Will o' Wisp; about which you have doubtless heard most marvellous tales related, but which, in fact, is nothing more than sulphurous vapours, that take fire and play about not more than four or five feet from the ground. They are never seen but in flat marshy fenny lands, and probably owe their origin to putrid and rotten plants, or animal matter, for they are frequently seen in church yards; which has given rise to several fabulous stories, many ignorant and credulous persons being persuaded that

they are the souls of the dead, who wickedly disposed in life, rise from their graves to mislead and entangle the unwary traveller, who heedlessly pursues the flame, which stops while the traveller runs to overtake him, and when near sets off again, thus deluding the poor creature into some uncertain or unknown path; but this may be philosophically accounted for, for the person who flies leaves a space, which is filled up by the air, and produces a current between him and the fire.

“ This will convince you how silly and ridiculous it is, to give too much way to imagination and fear; depend upon it, half of the tales, with which the ears of children are filled, of ghosts and spirits, owe their origin to some phœnomena of nature, and which an active fancy has formed into shape. Conscience too may often assist to give force to these terrors; thus idle tales first originate, and thus the foundation of superstition and fear is impressed upon the infant mind.”

*Eliza.*

*Eliza.*—“ Well, now I know the cause, I shall never be frightened at the *ignis fatuus* more.”

*Mrs. H.*—“ Always endeavour to trace effects to their causes, you will then find your mind gradually gather strength, and you will lose not only vain and idle, as well as ignorant opinions, which you may have contracted, but you will lose many superstitious fears which weaken and enslave the mind.”

*Emily.*—“ Mama, when you were at Mrs. Wilding's, did you not observe her niece, a most beautiful girl?”

*Mrs. H.*—“ I did, my dear, but what of her?”

*Emily.*—“ Do not you think her very accomplished?”

*Mrs. H.*—“ She plays and sings well, I grant, and judging by her port-folio, she not only draws well, but a great deal.”

*Eliza.*—“ Well, mama, those are accomplishments, are they not? and she is beautiful beside.”

*Mrs. H.*—“ Beauty is of small importance, and is at best but ideal. There can be no standard for taste. To convince you, the Hottentot thinks a flat head and nose a great ornament to the person; to effect this the heads of children are compressed by boards, and the parent takes great care to flatten the nose. The Hollander admires large lusty women. The inhabitants of the western and northern parts of America take pains to dye their teeth black, and their nails red, and think every one deficient in external charms who does not possess these requisites; to effect this they chew an immoderate quantity of the beetle nut, and use a kind of red ochre for their nails. The inhabitants of that part of Switzerland near the *Glaciers*, have large wens grow on their throats, which are called *goitres*, and so much do they admire this excrescence, that they regard every one who, according to their opinion, are deficient in this ornament, as wanting the principal beauty of person. Thus you see  
beauty

beauty depends upon taste, and ugliness, to which we are accustomed, soon loses its hideousness, and by being constantly before us, wears at length the countenance of beauty. Thus vice would not be ugly, were we to see no examples to the contrary; and thus an innocent and pure mind, by associating with others whose flagrant and wicked intentions and pursuits render them hideous to the world, not only loses its native goodness, but by associating only with the bad, sees things according to their medium, and acts as they do. Young people are apt to set too high a value upon personal beauty, which is but the blossom of a day; but intellectual perfections give dignity to deformity, and make it even pleasant to us. A well informed mind, a heart endued with the fixed and firm principles of virtue, can never lose its value; time will have no power over it; in proportion as the beauty of the face decreases, that of the mind gathers strength, and even in old age has power to charm. Accomplishments

accomplishments are pleasing, but these, without the necessary virtues of the mind, are only like a house well painted on the outside, while the interior of the building is filled with dirt and rubbish."

## WALK X.

*MRS. H.*—“ My dear children, I am going to Farmer Hudson’s; put on your bonnets, and be ready to accompany me.”

*Eliza.*—“ Mama we are both ready, but where is *Frederick* ?”

*Mrs. H.*—“ With your father in the library: there are some new books just come down from London, and he is anxious to look over them.”

*Eliza.*—“ What new works, mama? what are their names?”

*Mrs. H.*—“ Gibbon’s *Decline and Fall of the Roman Empire*, an English edition of Buffon’s *Natural History*, Langhorne’s *Fables of Flora*, and De Non’s *Picturesque Tour through Sicily and Malta*.”

*Eliza.*—“ Sicily,—that is where Mount Etna lies.”

*Mrs. H.*—“ Yes, my dear, a burning mountain that emits fire, smoke, and at times

times great quantities of liquid lava.— Vesuvius, in the kingdom of Naples, and Hecla, in Iceland, are likewise volcanos.”

*Eliza.*—“ To what is it owing, mama, that these mountains in particular should emit fire, and none else?”

*Mrs. H.*—“ Fifty or sixty feet below the surface of the earth, there has been proved to be such a degree of heat, as to cause suffocation, and extinguish light.— Hence it is generally supposed that there are concealed fires in every place under the earth, but no one can prove how these fires subsist, and upon what they depend for food; but certainly they have an excellent effect in preserving the seeds of the ground, and acting with regard to the earth, as the hot-house does upon plants in winter. These heats sometimes find places to vent themselves, as Etna and Vesuvius; the eruptions at these places have at various times been dreadful, sometimes they emit only a black heavy smoke, and are quiet for months and years together; but the

usual forerunner of an eruption is a hollow rumbling noise, and at times roaring as if the bowels of the mountain were convulsed; thunder and lightning, attended by an earthquake, then follows, flames are seen to proceed from the mountain, accompanied by torrents of burning lava, which running down in streams, overwhelms and destroys all the vineyards, as well as towns and villages, that lie in its way. Yet even these eruptions, dreadful as they are, and terrible as are their effects upon mankind, are not without their advantages; for it has been observed, that the earth produces more abundantly after them than before, for the air previous to an eruption is stifling and unwholesome; not a breeze agitates the leaf, or gives relief to the animal world, but an overwhelming heat seems to put a stop not only to vegetation, but almost to the functions of animal life; this the eruption and its consequences remove; the air becomes clear and pure, the ground is refreshed by salutary and wholesome showers,

showers, and the winds of heaven blow freely to invigorate both man and beast. It is observed that the sides of the mountain produce the finest fruits, and that the vineyards in the vicinities of Etna and Vesuvius are famous for giving the largest and greatest quantities of grapes. It is upon record that *Pliny*, who came to Portico (a town situated at the very foot of Vesuvius) to watch the progress of the eruption, upon the warning of danger, was left by all his attendants, and sat in his house patiently waiting the event; he paid however for his temerity, perishing himself in the torrents of liquid lava which surrounded him on all sides, and at length destroyed, in conjunction with an earthquake, the whole town.

“ A poor labourer, whose name is unknown, stands recorded as an example of filial piety; for being warned to quit his cottage and save his most valuable effects, took his aged mother on his back, and vainly endeavoured to save her from the destruc-

destruction which surrounded them; the attempt, however meritorious, was fruitless, they both perished, and filial piety, though not rewarded on earth, doubtless found rest in heaven.

“ Even so far back as the Trojan war, which is so divinely sung by the immortal Homer, we read of Eneas, when flying from the conflagration that surrounded him, leading his little son in one hand, his wife following, but his aged sire Anchises he carried on his back; this venerable charge, together with his household gods, the pious Eneas himself took care to guard.”

*Eliza.*—“ His household gods, mama, what do you mean by them ?”

*Mrs. H.*—“ The gods he worshiped; for before christianity was introduced by our blessed Saviour, mankind, enveloped in ignorance and superstition, vainly implored relief and assistance from images, the work of their own hands, and to whom they bent with awe and reverence.”

*Emily.*—“ What ! had they no idea of the Deity ? ”

*Mrs. H.*—“ They, particularly the Romans, worshiped the Deity under the name of Jove or Jupiter, him their fancy armed with thunder and lightning, and instead of a mild and merciful Creator, had only ideas of his vengeance. The Roman, or rather Ancient History, will give you the best idea of the darkness which then prevailed over the minds of men ; at some future time we will read both of them, and Homer’s Iliad and Odyssey, but you are yet too young to peruse either.”

*Eliza.*—“ I can’t comprehend what you mean by the Heathen Mythology ? ”

*Mrs. H.*—“ I have already told you that before the birth of our Saviour, mankind was in a state of ignorance, the knowledge of the deity was very imperfect and obscure, and except the Jews, who were as the scripture tells us, “ the chosen people of God,” the earth was filled with Pa-  
gans

gans or heathens, who paid their adoration to substances, the work of men's hands, and suffered themselves to be persuaded into the belief that they had the power to work miracles in their favour. They erected temples, which they consecrated to particular deities, whom they worshipped, and to whom they rendered divine honours; they were therefore denominated heathens, and many ages elapsed after the crucifixion of our Saviour, before his doctrines were generally received and established, and himself adored with the reverence due to him. From his name (Christ) we derive the name of christians, the noblest and most glorious that can dignify man. Even so early as during the ministry of Peter, one of the apostles of our Redeemer, the disciples preaching at Antioch received this name, which was to be so gloriously perpetuated to after-ages.

“ By slow and almost imperceptible degrees, though not without much opposition and severe persecutions, were the doctrines

trines of Christ propagated; but their purity, the conviction they carried to the heart of man, at length occasioned them to be universally received and established throughout Europe, and now, I hope, nearly over the largest half of the world.

“ The knowledge of mythology is useful only so far as it assists us in the perusal of the works of the ancients, contributing to elucidate the meaning, and helping us to understand the sense of the author, either in his fictions, emblems, or figures. You have no doubt read of Jupiter and Saturn, Mars and Venus, without understanding the places which they filled in the ideas of the heathens, but their names are now chiefly used allegorically or metaphorically. You have read of the breath of Boreas without comprehending that it was meant to convey an idea of the wind; of the power of Apollo or Sol, without figuring to yourself that he was portrayed and adored as the god of the Sun; this is a figurative manner of speaking, and

and contributes greatly to retard the knowledge you might derive from the authours who make use of these names. It is therefore necessary for every one to understand so much of the heathen mythology as will make them conversant with the names, power, and properties of these imaginary deities; at the same time your reason will convince you that no such persons ever did or ever will exist; the works of Homer, Virgil, as well as those of most heathen writers, can neither be perused with pleasure or advantage till you are well acquainted with their mythology.

“ But it gets late, the evening begins to draw in, we will return home, and reflection upon the wonders creation displays, will instruct us to lift our hearts to their Divine Original, and before we lay our heads upon our pillows, let us pray to the power that protects us, that our conduct through life may entitle us to his preservation. The sweetest of all offerings are the praises of a grateful heart, and while

we

we exert our reason, and look upon every animate and inanimate object that adorns creation, we must be insensible indeed if we be otherwise than grateful for the numberless blessings we enjoy.—Good night.”



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