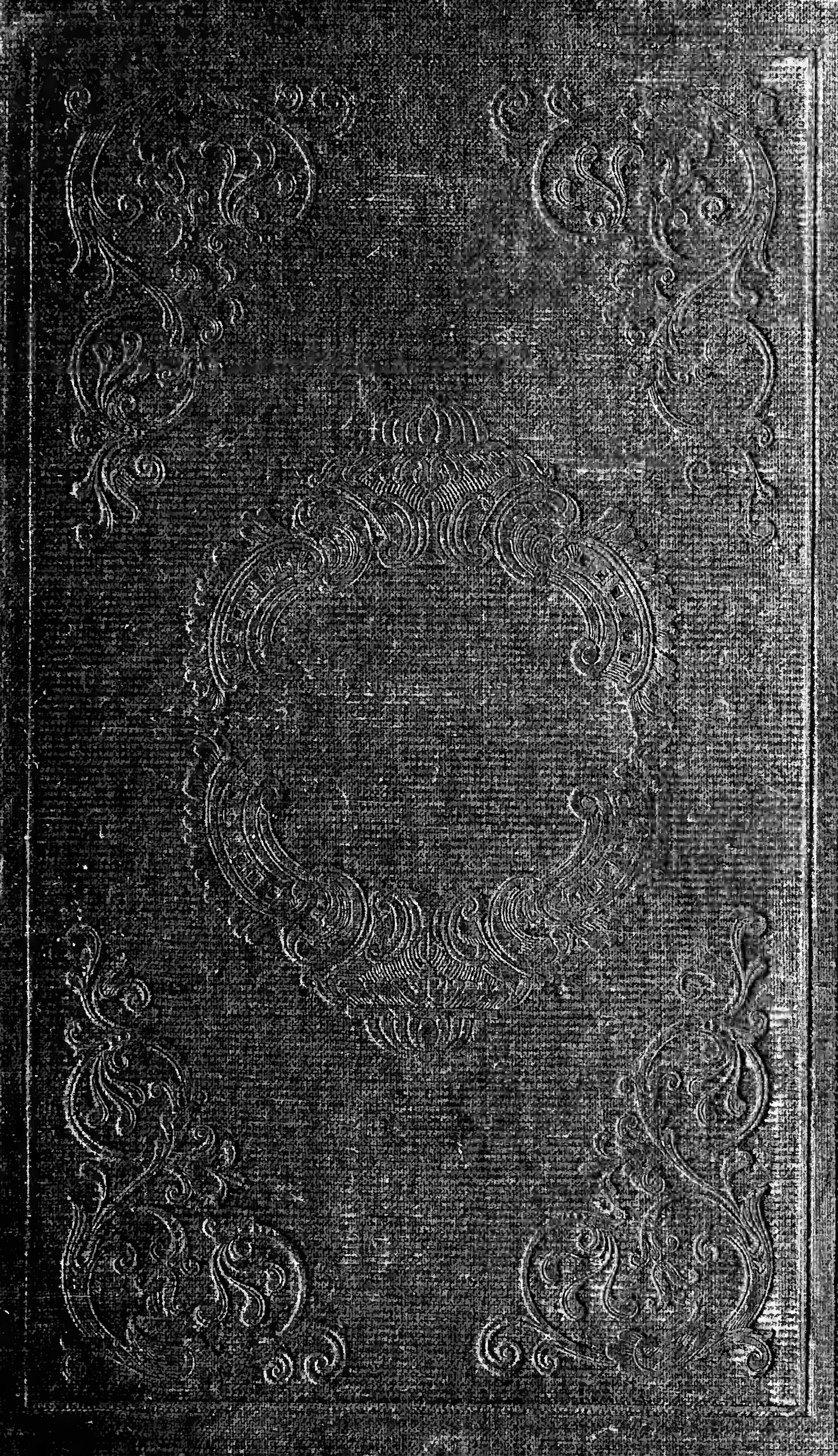

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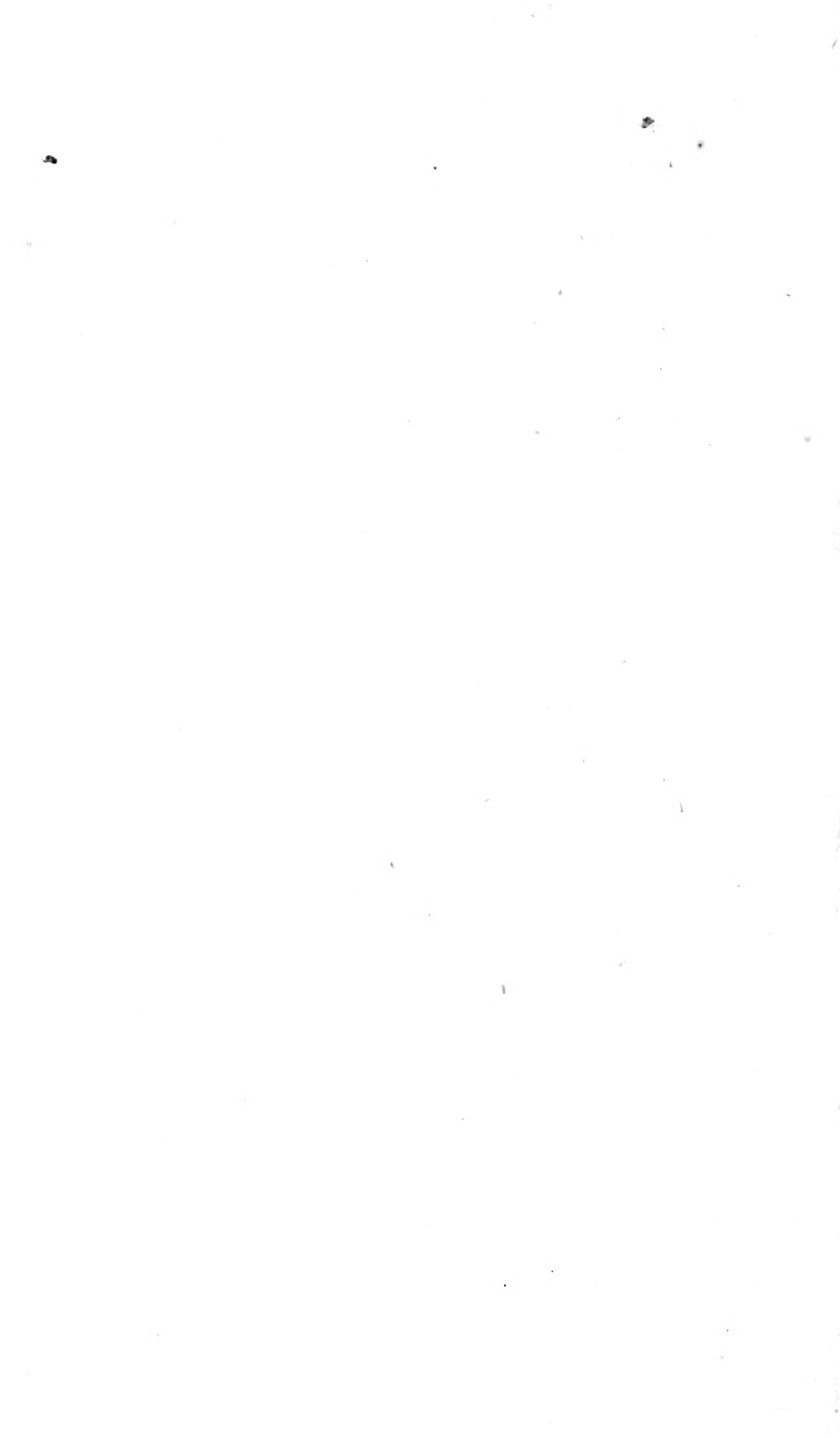

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THE ZOOLOGICAL GARDENS.

NARRATIVES OF NATURE,

AND

HISTORY BOOK

FOR

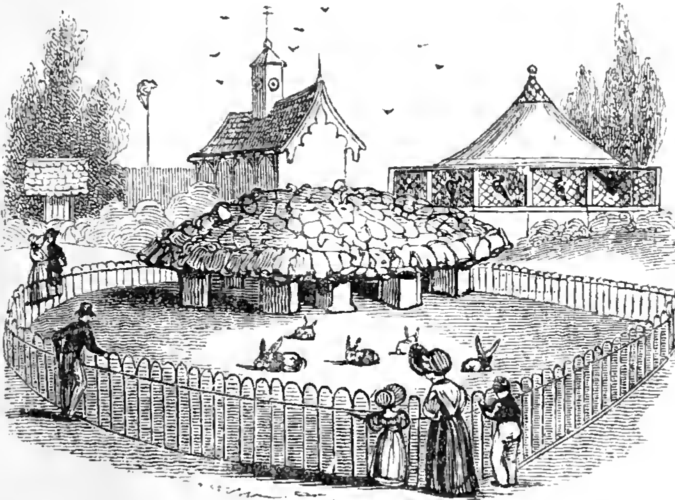
YOUNG NATURALISTS.

BY THE AUTHOR OF

" *Sketches from Nature*," " *The Young Emigrants*," " *Stepbrothers*,"
" *Prejudice Reproved*," " *Juvenile Forget-Me-Not*,"
and " *Nursery Fables*."

" The Lord is good to all, and his tender mercies are over all his works."

" Nothing lives, and moves, and breathes in vain."



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CONTENTS.

Preface . . . . v.

Introductory Address to my young readers . ix.

Chapter I.—Opening remarks on the study of Nature—Insects—Green Beetles—Lady-birds—May-Bug; curious particulars of the Larvæ of this insect—Spiders; curious species found in the Tobacco Plantation . . . . Page 1

Chapter II.—The old Ash-tree; its various tenants—Bees—Rose-cutter Bee; Upholsterer—Carding, commonly called Moss or Marsh Bee—Description of the Nest—One found in our Garden—Formation of the Comb; of the young Bees—Storying Bees—American Farmer's method of tracing the wild Bees in the Woods—Glass Hive—Village Schoolmistress—The Land Tortoise—The shipwrecked Sailor Boy—Anecdote of a young Nobleman . . . . Page 16

Chapter III.—Pillars of Sand; their appearance, how produced, and in what countries most frequent—The Peak of Derbyshire—Pool's Hole—Elden Hole . . . . . . Page 38

Chapter IV.—Some account of the Hedgehog (Peter) that lived in the Potato-pit—Natural History of the Hedgehog—The wild Squirrel; description of its Nest—Behaviour of Squirrels to the Nuthatch—Papa's tame Squirrel—Grey Squirrel of Lapland—Striped American Squirrel; description of its Magazine . Page 51.

Chapter V.—My Dormice—Remarkable Anecdotes of Mice—My Brother Tom's White Mice; unlucky escape of these little Animals—description of the Nest of the Field and Harvest-Mouse; with a few remarks on the Natural History of the Animal . . . . Page 66.

Chapter V.—Indian Rope Bridges—The tarabita bridge of Alchipichi—The Jhoola bridge at Rampore—The Great Bell at Moscow . . . . Page 78.

Chapter VII.—Snow, the Shepherd's Dog—A Spring Day—Description of Snow's Master—Hound Music—Newfoundland Dog—Assistance in a shipwreck off our Coast—Attachment of a Spaniel and Horse—Remarks on the Canine species. Page 88.

CHAPTER VIII.—China—its early civilization and present state—its buildings, monuments, pagodas, &c.—The Porcelain Tower of Nankin . . . . Page 106.

CHAPTER IX.—My sister's Barbary Doves—Reflections on God's Providence—Hints to my young readers . . Page 114.

CHAPTER X.—Juvenile Amusements—Substitute for Wax-dolls—Moss Grottos—The Wigwam—Winter employments—Autumnal afternoon—Children at work—Burning weeds—Making clothes for the Poor—Walk to a cottage—Harvest-school—The twins—Hints to my young readers . . . Page 124

CHAPTER XI.—Water-spouts—Whirlwinds—Basaltic columns and rocks . . . . Page 145.

CHAPTER XII.—The History of the Rabbits—Hints for managing these animals . . . . . . Page 153.

CHAPTER XIII.—The Pigeon-locker—with some account of its last tenants . . . . Page 172.

CHAPTER XIV.—The Robin's Nest—Subject of Birds continued—Anecdote of a grey Fly-catcher—of two Redbreasts Page 188.

CHAPTER XV.—The History and Importance of Railways—Dangers of the Ocean . . . . Page 205.

CHAPTER XVI.—My Brother Tom's domestic favourites—The tragical death of the young Jackdaws—The Owl Otho—Remarks on the migration of Birds of Passage—The tame Sparrow—Mamma s singing Bird . . . . . . Page 215.

CHAPTER XVII.—The young Leverets—Natural History of the Hare . . . . Page 228.

CHAPTER XVIII.—Atmospherical Illusions—St. Elmo's light—Natural History of the Serpent Tribe . . . . Page 245.

CHAPTER XIX.—Anecdotes of Papa's Monkey . Page 256.

CHAPTER XX.—The Peacock and his Attendant—The Natural History of the Peacock—Early Introduction into England—Indian method of entrapping them in their native Woods. Page 265.

PREFACE.

The pages of this volume offer nothing of a fictitious nature to enchant the mind of the young reader; they contain simply the events and reminiscences of early years—the sketch book of the young student of nature, which the author has been induced to arrange for the amusement and instruction of the juvenile public, with the hope that it may prove a fund of useful and entertaining knowledge.

Truth—simple truth—is the foundation on which works for the benefit of the young should be built. The assurance that the tale that is told, or the events of the book that is read, have actually taken place, gives an increase of pleasure to the young auditor or reader. The usual question asked by a child when listening to a story of more than common wonder is, "But is it true?" and too often his credulity is played upon to ensure his approbation, and increase his interest; the fictitious relation is vouched for as a fact, and the child is satisfied, though his judgment is deceived; and he continues to listen with confidence to the most absurd improbabilities, believing that which is false to be true. By this injudicious mode of proceeding, the judgment is perverted; reason, while yet in her day-spring, is forbidden to exercise her powers; and super-

stition, credulity, and a love of falsehood, are by degrees established in the infant mind.

The study of nature, on the other hand, is capable of no such perversion; because its basis is simple truth. The eyes of the young student of nature are directed to objects exposed to his immediate observation, and no deception can be practised. He may indeed express surprise when told of the transformation of an insect from the egg to the caterpillar, from the caterpillar to the chrysalis, and from thence to the perfect fly; or he may be astonished at the vegetation of a minute seed into a stately plant; but if he demand a confirmation of these wonders, the truth can be proved to his entire satisfaction by making his own eyes bear witness to the facts. Here nothing is taken on credit; but by noticing the wonders of creation in her simple things, he learns to believe what he reads and hears of her greater works.

By degrees the reasoning powers with which he is gifted begin to operate, and he is led to search into the causes and effects of all he sees around him. He learns to adore the goodness, the wisdom, and the power, that made this earth so wondrous fair; that spread the flowery carpet beneath his feet, and the blue canopy above his head; that heaped the high hills and lofty mountains above the valleys; that gathered the waters of the rolling ocean together, giving them their bounds that they should not pass; that called forth the animate things of creation, and assigned each its peculiar station and dwelling-place in earth, in air, and water, that they might live to the glory of their Maker and for their own happiness.

An intimate acquaintance with the study of Nature

can hardly fail of increasing the enjoyments of young persons; it prevents any dulness and vacuity of mind, whether at home or abroad; it elevates the mind, and awakens feelings of devotion towards the Almighty; it tends to nourish benevolent dispositions, to soften the heart, and disarm it of any natural tendency towards cruelty; for what child ever felt disposed to crush the insect on which it had been gazing with eyes of curiosity and admiration, or to destroy the animal it had been cherishing as a bosom pet?

Among the various amusements that offer themselves as a relaxation from the necessary restraints and fatigues of childish study, there is not one that presents greater advantages, as a source of pleasing and rational enjoyment, than the possession of little domestic animals.

A child of a benevolent and affectionate disposition will here find full scope for exercising many amiable qualities, and will hardly fail of regarding with feelings of lively interest, the creatures that he cherishes, and which are so entirely dependent on his care for the supply of their several necessities. He will be amply repaid for the trouble he bestows, and the time he devotes to them, snatched from other and lighter sports, by their grateful attachment to his person, and the mute caresses they offer in return for his kindness; beside the satisfaction of seeing his little favourites happily thriving beneath the attentive care of a tender master.

Here too he will, if of a reflecting turn of mind, derive much real and rational pleasure from studying the natural history, the habits, and even the peculiar traits of character that distinguish each individual in his little family. Nor is this all. Many useful les-

sons of morality and industry are to be gathered by the little student of nature, which, if aptly applied by himself or his parents or preceptors, to his own condition, may be rendered invaluable, and bring forth excellent fruits in the child's progress from youth to manhood.

Let us not despise this simple source of knowledge. "Go to the ant, thou sluggard," says the king of Israel; "consider her ways, and be wise." The royal preacher was not above drawing wisdom from the lowly things of earth—wisdom and knowledge, whose excellence was the wonder of all nations, as we learn from the history of the kings of Israel and Judah. In the Second Book of Chronicles we read of this great king, that his wisdom exceeded the wisdom of all nations of the East; that people came from far countries to see his works and hear his words; that he was skilled in all natural history, for he spake of trees from the cedar that is on Mount Lebanon to the hyssop that groweth out of the wall: he spake of beasts, also of fowls and creeping things, and of fishes.

The same field of knowledge is still open. Nature still spreads open her ample volume to him who will look with careful eye upon her curious page, as well now as in the days of the illustrious Solomon; and wisdom and understanding may still be gleaned by the industrious mind from the works of creation, which, like the Patriarch's vision of the ladder, still reaches from earth to heaven, where alone all wisdom is perfected. By these steps the children of men may be led from the creature, to fix their minds on the great, the wise, the merciful Creator; and thus may they be taught to

"Look through nature up to nature's God."

INTRODUCTORY ADDRESS TO MY YOUNG READERS.

There are most probably many among you, my dear little friends, who have experienced the most lively emotions of pleasure from the possession of some innocent and beloved pet; who have bestowed the warmest caresses on a darling white rabbit or turtle-dove; or have amused yourselves by watching the gamesome frolics of a cosset-lamb, or shared the merry tricks of some lively kitten or playful squirrel; whose eye has anxiously regarded the drooping wings and depressed crest of some favourite bird, or sighed over your fruitless endeavours to supply the care of the parent-bird to some half-fledged nestlings that you have rescued from more immediate destruction, or to rear some tender, wild rabbit, or tiny leveret, that has been cast upon your protection. If the labours of the bee, or the ant, or the spider, have ever engaged your attention; or you have marked with curious eyes the changes of the silkworm or caterpillar, through all its various metamorphosis—if any of these things have ever been objects of your curiosity or tender solicitude, you will not be entirely uninterested in the subject of the present volume, in whose pages I propose to offer a few practical hints on the management of domestic animals, derived from my own observation and experience; pointing out whatever I consider beneficial either to adopt or avoid, in the treatment of such creatures as may form the subject of my book.

When a child, my father indulged me and my sisters and brother with keeping a variety of live stock, but always with this proviso—that they should be kindly and carefully treated. The first instance of cruelty or of wilful neglect, was to be punished by immediately depriving us of our ill-treated little favourite; consi-

dering us as unworthy of having the care of any creature who might thus be made a sufferer from our carelessness. Nor would he allow us to call a servant from his duty to attend on our rabbits, hares, pigeons, &c., unless indeed illness or extreme wet weather precluded our personal attendance on them. Moreover, he made us accountable for any injury done by any member of our quadruped family, through want of due carefulness on our part in securing them; and also gave us to understand, that any expense necessary for providing for the maintenance and convenience of our live stock, must be forthcoming from our own private pocket-money; which money, I must inform you, we were obliged to obtain by our own industry, and was the well-earned reward of our labours in the garden, or extra diligence in performing sundry little tasks of work for mamma or the elders of the family.

These regulations, which may seem somewhat hard to such of my young readers as have been accustomed to unlimited indulgence from their parents, and to have all their childish wishes, if not too unreasonable, gratified without their care or toil, were, nevertheless, not without their beneficial effects on our minds; and they were patiently and cheerfully submitted to by myself and my sisters, Jane and Susanna, and my youngest brother Tom, whom we took in as a sort of under partner in the concern. And though we devoted many an hour that would otherwise have been employed in play, to seeking food for our rabbits, when vegetables were scarce in the garden; and though oftentimes our fingers ached with cold, on an autumnal and wintry day, while performing the necessary duties of attendance on our little favourites, we never suffered personal inconvenience to interfere with the comforts

of our pets; and I believe I may say with truth, that during a period of four years, not one of them died from starvation, though many through casual accidents, improper food, and other causes.

And let me here observe to you, my dears, that half the untimely deaths that happen among domestic favourites in general, may be traced either to improper treatment through ignorance, or to want of due regularity and attention in feeding and cleaning them.

As animals in a state of captivity are unable to provide for their several necessities, it particularly behoves those young persons who voluntarily undertake the charge of them, to be mindful of their comforts, otherwise, let me assure them, they are guilty of great cruelty.

A careless child, or one of a volatile disposition, should never be allowed the possession of any animal that may stand a chance of suffering from his inattention to its wants. Let all such seek amusement in insensible objects. A bat, a ball, a top, or a kite, is carelessly left about and disregarded, suffer no pain, and the loss of these misused toys falls solely on the possessor; but omitting to supply an aninal with food for one day, or neglecting to attend to their cleanliness and general comforts, is productive of sad consequences. The poor little captive, after languishing in extreme misery, finally perishes by disease, brought on by neglect on the part of his thoughtless, and in this instance, cruel and unkind master or mistress.

To avoid the painful feelings arising from self-reproach, it will therefore, methinks, be wisest and best for such children to consider well their own dispositions, before they rashly undertake the charge of sensitive creatures, who are equally subject to pai—to all the distressing inconveniences attendant on extremes

of danger and thirst, heat and cold, with themselves; and if they cannot resolve to be constant and uniform in the duties they undertake to perform, let them leave such sources of amusement to the careful and the benevolent, who will, from conscientious motives, be mindful of those helpless little creatures that they have engaged to provide for; convinced that all wilful neglect of them is criminal in those that retain them in subjection, whether as a source of pleasure or profit; and that such conduct will be regarded severely by that Almighty Being, whose piercing eye is abroad over all his works, and who beholds even a sparrow fall to the ground—who careth for the least even as for the greatest of his creatures, and that he will in no wise disregard their mute appeal to his protection.

Should the experience of my early years, and the observations I have had the opportunity of making, as I acquired more reflection, prove a source of amusement or instruction to my young readers, I shall be fully repaid for any trouble I may have taken in their behalf. May the eyes that have glanced over the pages of this volume, be turned from them with increasing interest, to gaze upon the works of their great Creator, whose wisdom, power, and mercy, is displayed not less in the minute, than in the magnificent productions of his hand. May they, from henceforth, behold his goodness revealed in all his works, whether they lift their admiring eyes to the starry host of heaven above, or cast them on the earth beneath, or on the mighty world of surrounding waters; may they glorify their Maker as the fountain of all wisdom, and acknowledge that "Great is the Lord, and his name worthy to be praised; great are the works of the Lord, sought out of all them that have pleasure therein."

NARRATIVES OF NATURE.

CHAPTER I.

NOTHING that exists in the animal, vegetable, or mineral world, is unworthy of our attention: a close investigation of the works of nature will afford an increase of amusement and of instruction. Every object that we examine bears in it the impress of a divine original; from the springing of a blade of grass and the vegetation of the most minute seed, to the growth of the forest oak in its meridian pride; from the crystallization of a drop of water, to the formation of a mighty mountain; from the sparkling of the dew-drop that gems the rose leaf, or glitters on the grassy meadow, to the flow of the majestic river, or the swelling waters of the ocean; from the exquisite organization and delicate proportions of the smallest fly that floats upon the summer air, to the powerful strength and massive frame of the gigantic elephant,—all are alike worthy of the admiration of the young student of nature. He will learn that all these things are alike the exercise of a divine power, the creation of a divine will; and his mind will be filled with mingled sentiments of wonder, love, and praise towards that Being who called into existence, by his sovereign word, the great and small things of the universe; who made a way for the lightning, and a path for the thunder; who divided the light from the darkness; who

filleth all things living with plenteousness; whose works praise him, bearing testimony of his greatness; whose heavens declare his glory, and whose firmament sheweth his handy work. O that men would therefore praise the Lord for his goodness, and the wonders that he doeth for the children of men!

My attention, while yet but a tender child, was directed to studying the wonderful economy of the insect world, chiefly by the example of my eldest sisters, who took the greatest interest in watching the proceedings of spiders, silkworms, caterpillars, and beetles.

One spring in particular they noticed that the leaves of the common dock-weed, (*lapathum*,) that grew near the edge of the river in the meadow, were covered with little golden-coloured eggs, not exceeding in size the seeds of the poppy. These were arranged on the under surface of the leaves with the utmost regularity, as if they had been pricked down with the point of a fine needle. At first they could not tell what they were, but a little observation satisfied their curiosity. They found them to be the eggs of a certain beautiful species of beetle, of a bright green colour, and about the size of the red lady-bird: there were also a variety of a shining copper colour. These creatures they discovered in vast numbers depositing their eggs on the dock-leaves. And here I would pause to point out the instinctive wisdom of the parent insect, which teaches her to provide for the future wants of her unknown progeny, of whose future existence she has no idea, neither can by any chance foresee; for she pro-

duces not that form that shall be, but a mere insensible egg, which bears no likeness to the living caterpillar that will issue from it, nor to the chrysalis; and still less to that of the fly that shall burst its thraldom and appear to the world in the likeness of its parent.

Struck with the extreme beauty of the insects, my sisters collected a number of them and their eggs, making little paper boxes and trays for their reception, which they placed on the window-sill of their play-room, supplying them with fresh dock-leaves every day; but the dock-leaves not being the proper food of the beetles themselves, they either died after having deposited their eggs on the leaves, or unfolding the green cases that covered their bodies, displayed a pair of gauze wings of the most exquisite and delicate texture, and soared into the air through the open window, winging their way back to the river's side.

My sisters were but little girls at that time, and they had little knowledge of the transformations that occur in the insect world, therefore were greatly surprised after a few days' time to find the pretty golden eggs turn to a blackish grey, and shortly afterwards into tiny black caterpillars, not exceeding in size the head of a pin, with hairy backs and hairy feet.

Disgusted with the appearance of these little creatures, my sisters turned them all out of the window, where they perished, no doubt, for want of that peculiar food which had been provided for their nourishment by the instinctive care of the parent insect.

We next made a collection of lady-birds of every variety in size and colour we could find, from the large red lady-bird with black spotted cases to the wings, to the red lady-bird with white spots on its shoulders,

which we used to find on the flags by the river side; the yellow lady-bird with four black spots, and the tiny lady-bird with cases to its wings like tortoise-shell. These we duly supplied with leaves of whatever plant we found them on, but they soon took wing and flew away from us: they were but the play-things of a day.

The lady-birds are among the *scarabei*, the antennæ or horns of which are finished like a comb, and are called pectinated, from the Latin word *pecten*, which signifies a comb.

Beetles belong to the order of coleoptera; *coleop* signifying a sheath or case, *tera*, wings. Linnæus enumerates eighty-seven species of scarabæus: among these I shall only name a few.

The chaffer, or May-bug; the stag-beetle, or beautiful horned species; the capricorn, of which there are many beautiful varieties; the cases of some of this tribe are of a verdant green, some gold and green, others scarlet and gold, others purple and gold.

The elephant-beetle is of all others the largest; it is a native of South America. The Indian diamond-beetle is the most splendid of the whole race; it is even worn by eastern ladies as an ornament among the hair, or on the hem of their dresses.

There are a vast number of black beetles; some large, and of a shining purply black, some of a dull dead black; these last inhabit cellars and other damp places. The black beetles with sulcated wings, that are common in our houses and path, with strong pincers, and prey on other insects, are extremely fierce; they will easily master a large spider, and bear him away in their mouths to some crack in the wainscot, and there devour him.

Then there is the great black beetle with jagged legs, that makes a humming noise of an evening in the summer and autumn, as they whirl through the air in search of insects. The country people call these beetles *clocks.* They say owls and bats eat them when they fly abroad of a night.

I have often beheld these poor harmless creatures eaten up alive by a little yellow insect, a species of *aphides.*

But of all the beetle tribe, I know of none more singular in its habits than the common cockchaffer, and having had many opportunities of observing the natural history of this insect, I shall proceed to giving a few particulars of its manners and customs.

The cockchaffer, like the rest of the genus, has a pair of cases to its wings, these cases are of a reddish brown, sprinkled with a whitish powder. The fore legs are short and very strong, and dentated, (or jagged, like teeth,) which enable them to burrow in the ground when they retire for the purpose of depositing their eggs. These eggs they bury not less than a foot deep in the earth, the female being furnished with a sharp instrument, which serves as a borer to perforate the ground.

At the end of three months these eggs are changed into small grubs, which crawl forth and begin to feed on the roots of whatever plant they meet with in their subterranean travels.

They continue in the grub state for three years, gradually increasing in size, and making great havoc among the vegetables and corn crops that grow in their vicinity.

In the grub state they are much sought for by rooks,

crows, daws, pies, lapwings, and gulls. In the fall of the year you may see the newly-ploughed fields thronged with these birds, all amicably employed in the same pursuit, that of searching among the fresh-turned clods for the larvæ of the cockchaffer, which form a principal part of their food at this season of the year; and were it not for the annual destruction of these insects, they would occasion great losses to the farmer by injuring the corn crops.

When arrived at their fullest size, they are an inch and a half in length, and about the thickness of a person's middle finger, of a yellowish white colour. The body consists of twelve rings or segments, on each side of which there are nine breathing holes and three red feet. The head is large and thick, of a coppery red, with a pincer in front, and a semicircular lip, which is employed in sucking the juices and cutting the roots of the plants on which it feeds. It has no eyes, and as its dwelling is deep below the surface of the earth, it does not need them, its two feelers serving to direct all its motions.

After passing a period of three years under-ground, at the commencement of the fourth it begins to prepare for its resurrection from its subterranean abode.

Previous to its transformation the grub buries itself deeper and deeper in the earth: sometimes it has been found to the amazing depth of four and six feet beneath the surface, and thus immured, it proceeds to dig for itself a hollow chamber, which it renders perfectly smooth and shining, by means of a gummy secretion emitted at will from its body. Its abode being thus formed, it begins to shorten its body and to swell in size, till at length it bursts its last skin, and assumes the

form of the chrysalis; but even in this state the cases of the wings and the head may be discerned, the lower part of the insect remains indistinct, and has been likened to an infant in swaddling clothes.

For three months the chaffer continues in the chrysalis state. About the middle of January the insect casts aside its trammels and becomes perfect, but is too weak and torpid to work its way up to the surface of the earth; this is performed by slow degrees, and its final disinterment from its earthly thraldom does not take place till the middle of May or the beginning of June; it may then be seen and heard of a still evening bursting up beneath your feet with a bouncing noise, and after a few minutes' exercise of its newly-acquired wings, whirling itself aloft into the calm atmosphere, where it may be seen, with hundreds of its disentombed companions, sporting in airy reels over the top of some lofty tree in the garden, filling the air with the buzzing murmur of their wings.

They live till the end of the summer in their perfect state, and do not die directly after having deposited their eggs in the ground, as is the case with the generality of insects; so that the natural life of this insect may be considered to be not less than from three years and a half to four years.

I have often noticed the rising of these singular insects from the earth of a warm summer's evening; they bounce up with a noise similar to that made by the drawing of a cork from a bottle of brisk ale or cider. One evening in particular, I was walking in the garden, and my attention was drawn to a cat that had been quietly following my steps. As the chaffers issued from the ground, I observed that puss cut the most

comical capers, sometimes springing into the air to the height of two feet at least. At first I imagined it was fear that caused her to perform such droll antics, but on watching her movements more narrowly, I perceived she was catching cockchaffers, which she ate with great relish. She became so expert in her chase, that few of these newly-risen insects escaped her clutches. Among its many enemies I certainly had never reckoned cats. But it is well for man that this insect has so many destroyers, as they are very injurious to all kinds of vegetation, both in the grub and fly state.

During the heat of the day the cockchaffers conceal themselves beneath the leaves of plants or in their blossoms, till the cool of the evening invites them abroad again. I had often wondered where they hid themselves during the day-time, but what I could not discover, a monkey did for me.

One summer's day a French boy came to the parlour windows with a monkey in his arms; a hideous beast she was, with dirty grey hair, a naked, wrinkled face, inquisitive eyes, and long, lean hands. Ma'mselle Gotton (for so her master called her) was dressed in a miserable russet robe, a scarlet serge apron, much the worse for wear, and blue worsted stockings; the gown had short sleeves' for the purpose of displaying a pair of long naked arms, which had been shaved to the elbow, to the great disfigurement of Ma'mselle Gotton. She had a leather belt round her waist, to which was fastened a rusty iron chain, and was, on the whole, one of the ugliest and most miserable looking beasts I ever beheld.

When we approached the window to look at her, she

held out her hand, opening her wide mouth at the same time, to intimate she wanted something to eat; whilst we were selecting an apple from the dessert, she suddenly twirled round, snatched the chain from the French boy's fingers, and ran to a rose-bush close by the window, peered under the leaves with her cunning eyes, and seized a cockchaffer in her bony fingers, which she devoured with an air of great satisfaction: another and another were discovered, and eaten in a trice: Ma'mselle soon cleared the plants and shrubs round her of a number of these insects, and then returned for her apple.

Some one asked the boy whether his monkey were strong enough to bear the cold of our English winters; to which he replied, with a significant shrug, "Ou, ou; Ma'mselle Gotton is a very strong monque;" and holding out a brown hand, almost as dark in colour as the strong monque's paw, to receive the donation of our pence, he whistled to Gotton, who sprang upon his shoulder with a grimace that made us all laugh, and departed.

Among the insect tribe the spider, though generally an object of disgust and aversion, is not the least worthy of our attention. The manners and habits of this little animal are so curious as to afford considerable amusement to those who take pleasure in studying the economy of the animal creation.

There are a vast variety of these creatures, and each distinguished for some peculiarity, either of form, colour, disposition, or habits, that one can scarcely ever exhaust the fund of entertainment they afford.

The spider *(aranea)* is the most subtle, the most treacherous, the most rapacious, and I may add the

most ingenious, and, for its size, the strongest of all the insect tribes. When compared with the spider, the bee appears in intelligence to sink into a mere instinctive machine; she follows an unerring law in the formation of her cell, from which she never deviates; if baffled in her designs, she makes use of no such expedients as we notice in the spider, who lays her toils to entrap her prey, secretes herself in some obscure corner, watches in ambush for her foe, feigns death or sleep, the better to disguise her treacherous designs; if broken, repairs her web, and if destroyed, chooses some more favourable situation, where she may be freer from molestation, yet equally suitable for her purpose.

Though so fierce an enemy to all other insects, and even to its own species, on whom it makes frequent war, and commits the most unjust depredations, the spider is by no means hurtful to man, but rather beneficial, by freeing him from many noxious insects, that would otherwise annoy and injure him. The extreme ugliness of its form, however, creates for it many enemies, and the spider is killed without remorse, and banished from our dwelling, on account of its unpleasing appearance, and from no other cause; its useful services are quite overlooked. It is positively a very ill-used animal, and though I must own I cannot help feeling a sensation of disgust when a spider gallops over my face or neck, I never willingly put one to death, and have often watched the manœuvres of these artful insects with great interest.

How truly beautiful and admirable is the workmanship of one of those finely-woven webs which we sometimes see suspended like a beautiful net or gauze veil

outside our windows, or on the branch of some tree, all glittering with the diamond dew-drops, ere the warmth of the surrounding atmosphere has dried them, or the passing breeze shaken those liquid gems to the earth. The finest wrought lace, the most exquisite Indian muslin, cannot compare in texture or design to this natural net-work; and when we minutely examine its structure, the delicacy of the materials, and its strength in capturing the winged insects that fall within its toils, we cannot but admire the skill with which the insect has performed her task, and the infinite wisdom of that Power which has bestowed such excellent knowledge on a creature so insignificant in form. Possibly the art of weaving was first suggested from the labours of this very insect.

Among the variety of spider's webs, that of a dusky grey spider (I think it is called *labarynthicus*) is very well worth observation. This web may be seen at the bottom of bushes and woody plants, partly affixed to the ground in a horizontal direction: it is very thickly woven, like muslin. The spider inhabits a deep cylindrical well in the centre of the web, from the bottom of which he darts upwards with surprising rapidity when he he feels, by the agitation of the threads that compose his net, that some luckless prey has become entangled. This spider puts me in mind of an expert angler, who knows by the pulling of his line when a fish bites, and is ready instantly to hook it.

The labarynthicus is of a dusky grey, with a black belly, and the form of the body is oval.

There is another spider of this kind, that spins its web in the tops of furze-bushes and other shrubs: this is a sort of steel colour, rather small, but makes large,

thick webs, and is very subtle. There is also a small spider that I have often noticed among the grass in autumn; it abounds in dry pastures, and is the same that draws those fine gossamer lines over the meadows which we observe towards the close of summer, giving such a brilliant effect to the meadows early of a morning, when the morning sun shines on the dew that hangs threaded like precious stones upon these fine-drawn lines. These gossamer threads are more particularly observable towards the close of the year, than at any other season.

There is a species of garden spider, that I call the 'nursing spider.' After having secured her eggs in a nice little silken bag, she carries it about with her in all her rambles, and is so careful of this precious deposit, that nothing can induce her to relinquish it. If by any mischance she drops it, she returns in search of it directly, and again fastens it to her body by means of fine threads, which she spins at will. I am not certain, but think this species are called *saccata*, from carrying their eggs in a little bag or sack glued to their bellies. Both mother and sack are often the prey of the little blue tomtit *(parus cœruleous* and *parus candatus)*, those voracious little spider-hunters. When the eggs of this spider are hatched, she permits the little spiders to mount on her back, and thus contrives to carry them with her. I have seen a spider thus burdened with tiny, lively little spiders, not bigger than a small pin's head. If by chance you disturb the web of the saccata, in an instant the little ones flock to their mother: you may see them running along the fine lines of the web from all directions; some of them will attach themselves to the threads she darts out, and while part

of her numerous family mount on her back, the others are borne along in a little train after her by means of the above-mentioned threads. This spider is of a dull iron-grey colour, and lives on the surface of the ground, suspending her nets on very low bushes.

While at work in the garden, I have noticed a variety of very elegantly marked spiders. Some yellow, spotted with white; others of a lively bright green, marked with white, yellow, and even scarlet spots, stripes, and chains: some white, with pale grey or fawn-coloured spots; white, with scarlet heads; or red heads and green bodies. But the most beautiful, as well as the largest variety of this insect I ever saw, was caught in one of our great nut-trees, in a very strong web of beautiful workmanship, and another a few days afterwards in the plantation of tobacco plants in the garden.

This species I find is called the *diadema*, the largest and most beautifully coloured of any of our English *aranea.*

The body of the one taken in the nut-tree was as large as a nut; in shape a little inclined to the oval; the abdomen was downy, and of a bright apricot colour, the upper part of the body adorned with black and white circles and dots, having a long band down the middle of the back, set with oval, pearly spots. The legs of this animal were large and long, armed with hairy spicula of a reddish orange.

The same year one of this species was discovered, the body of which bore a great resemblance to a ripe strawberry, only the spots were rather white than yellow, and the legs were ringed with purplish bars: it was very handsome. The shoulders were remarkably raised (or gibbous) of this spider, and it looked

very fierce when placed under a glass. It seemed, for an insect, what tigers are among the beasts.

The spider that was found among the tobacco plants was of a fine green, almost the hue of the leaves; the body was as large as that of the former species, only longer and flatter, and marked with red and white spots.

This spider and its mate were regarded with great uneasiness by my sister Jane and I, whose business it was to top the tobacco plants, for which service we were paid by papa at the rate of threepence a week each.

The process of topping the tobacco (*nicotiana*) was very simple, consisting merely in nipping out the buds, that would have produced flowers if suffered to expand. The oftener these buds were removed, the stronger the plants became: the sap and juices that should have produced the blossoms being thrown into the leaves, which thereby increased to a much greater size. If the business of topping the plants were neglected only for a few days, we were sure to see pink trumpet-shaped blossoms opening on the plant, to our shame and confusion, and papa's indignation; for I must tell you, he was so particular, that if we undertook a job of any kind, he expected we should do it well and punctually. Now, so great was my antipathy to the great green spider that had taken up its lodging between the two rows of tobacco it was my business to top, that I suffered the plants to come into full bloom, rather than venture to approach the intruder. Papa was obliged to have the spider removed from the plantation, to save his tobacco from being spoiled.

Of the whole race, the shepherd-spider or harvest-

man is the most innocent and harmless. Instead of being furnished with eight eyes, these spiders have but two; their body is very small, of a pale dusty grey; they have eight long legs, with three joints in each; when standing they cover a large circle of ground; they have two feelers, which they frequently stretch out when standing at rest on the wall; they gallop along at a great rate on their long legs, and are especially abundant in harvest time. This harmless creature is regarded with some degree of affection by the lower orders, and, indeed, by all persons who prize a meek and quiet temper.

The spider (*aranea*, in zoology,) belongs to the *aptera* order of insects, or such as have no wings. This genus is characterized as having eight legs and eight eyes; the mouth is furnished with two claws and two feelers, (or palpi,) these are articulated; the body is provided with papillæ for weaving; they are covered with a crustaceous coat, tender and brittle, which they sometimes shed; the head is armed with a pair of forceps or hooks, for seizing and holding its prey: the body of this animal is divided from the head and shoulders, so as to adhere only by a fine filament. There is a great variety in the form of this insect, as well as in its habits.

Some spiders are hairy, others smooth; some are round, others oval, and a third angular. Some weave round webs, others horizontal and funnel-shaped. Some live in the centre of the web, some at the bottom, others in the corner, and others at a distance from it. They are all subtle, fierce, and rapacious, even feeding on one another when other prey is not at hand. The stronger invades the web of the weaker,

murdering the luckless tenant, and most unhandsomely taking possession of his house, if his own chances to be out of repair.

Some spiders bury their eggs in the earth, others fasten them to the walls of buildings, or beneath the eaves: others, as the saccata, always carry their egg-bag with them; some glue them to the under side of a leaf, and some weave a silken cradle over a bramble or rose-leaf, in the centre of which they suspend the bag by several transverse threads. A beautiful specimen of this sort of sheltering nest I met with in my walks the other day, but on gathering the leaf that supported the silken roof, the bag was shaken from its position, and fell among the grass, where it most probably remained unnoticed by birds, who might have devoured it in its pendant situation.

CHAPTER II.

The greatest ornament our grounds could boast were the two noble ash-trees that grew beside the garden pales, and shaded the road in front of our house. The first spring we took possession of our residence, a swarm of bees settled in the hollow of one of these trees, and there for several years they continued to increase and flourish, the young hives ascending higher into the tree as they became more numerous. It was very amusing to watch these busy insects flying in and out of the round hole in the trunk of the tree, going forth to, or returning home from their labours.

Many persons advised papa to have the tree cut down for the sake of the honey that it contained; but this he would not do, as the ash was a great ornament

to the sitting-room, and a beautiful object from meadow and gardens. Besides, he liked to encourage the industrious little colony, and so the bees remained undisturbed till the spring of the year 1818 (which was the spring in which he died.)

We were surprised at seeing nothing of the bees during the whole of that hot summer; but in their stead a vast number of bats (*vespertillo*) used to issue from the hollow of the tree as soon as evening approached. It is supposed the bats had taken possession of the tree while the bees were in a torpid state, and had destroyed the whole colony. The bats multiplied in the course of the two following years to such a degree, that we were at last obliged to have them destroyed. More than a bushel measure of these beasts were killed in the course of one evening.

After the extermination of the bats, a pair of jackdaws took possession of the ash-tree, and built their nest in the hollow of a branch that had been torn off by the wind, and hatched five young ones, which became the prey of a covetous urchin, who sold the unfledged birds for the sum of two-pence to my brother Tom.

The old jackdaws, highly incensed with having been deprived of their young family, left the neighbourhood in disgust. But the ash-tree did not long remain untenanted; no sooner had the daws departed, than a pair of great white owls hopped into the deserted tenement, where they hatched five of the softest, prettiest little owlets that ever were seen.

Of an evening you might perceive them peering from the hollow of the tree with their round white heads and great bright black eyes, and hear them hissing like so many little serpents, while the old owls were skim-

ming the fields and meadows in search of food. Of a night they occasioned a sad disturbance, screaming and hissing; but as they were perfectly harmless in other respects, we forgave their noise, and would not suffer them to be molested, and they might have remained undisputed tenants of the tree till this day, had not a sad accident deprived them of their comfortable retreat, and us of one of the finest ornaments of the estate.

A dreadful autumnal gale shivered the trunk of the noble tree, and rent it from top to bottom. We heard the crash amid the raging of the storm, and at midnight the men-servants were called up by some travellers to remove the fallen trunk and the branches that blocked the road, to the interruption of all passengers. Great was our regret when the morning's light revealed the loss we had sustained in the fall of our dear old tree. I scarcely know which party had most cause to deplore the downfall of the ash-tree—the owls or ourselves. The former certainly suffered the more immediate inconvenience, as they were deprived of a comfortable retreat, and were turned out without an hour's warning, to brave the inclemency of one of the most tremendous hurricanes that I ever remember. For two succeeding nights these poor birds continued to hover over the space where their nest had been, shrieking most piteously, and evidently at a loss to account for the non-appearance of the old tree; on the third, they left us entirely, to seek some new place of abode.

The owls soon forgot the loss they had sustained, but we have never ceased to regret the storm that destroyed our beautiful, our stately tree: the remaining ash

looks so lonely since it has been deprived of its partner!

So much has been written by naturalists on the economy of the domestic honey-bee, (*mellifica,*) that I should find little of a novel nature to introduce to the attention of my readers. I shall rather confine myself to giving some account of the different species of wild bees, which, though less known, are not less interesting in their habits. Among these the most remarkable are, the rose-cutter, *centincularis;* the upholsterer; the *muscorum*, or carding-bee; and the *violacca*, or carpenter.

The rose-cutter bee is a small, black, shining bee: the nests of this species are made of oval and semi-oval pieces, cut out of the leaves of the rose-tree, and curiously plaited, like a quilt, into small cells, about the size and thickness of a silver thimble; these little cases are made beneath the surface of the ground, in light sandy earth. There is a variety of the leaf-cutter bees. Some of these insects build their cells with pieces cut from the leaves of the horse-chestnut or the birch, others with the leaves of the rose: all are equally industrious. They dig in the ground, and there form their little nests: some are shaped like quills, others are larger and like thimbles.

You may observe in spring and summer the leaves of the rose-tree curiously cut into holes, as if with a pinking-iron, and yet the little insect that cuts out these regular forms has no mathematical instrument, no compasses to strike the circles and semlcircles, that it adopts for the formation of its little cell. I have never been so fortunate as to see one of the cells of the leaf-cutter bee; but my aunt informed me, that some

years ago, when she lived near London, she was in the habit of keeping geraniums and roses outside her windows, on a flower stand; and one day, observing the earth had been loosened about the roots of a scarlet Japan rose, she stirred the mould, thinking a worm or grub had been introduced into the pot, when among the loose particles she found five or six curious little cases, about the size of a thimble, entirely covered with circular and semi-circular pieces, that had been cut out of the rose-leaves; the ends of these cases were sealed up with a large oval; each of these cases contained a small white worm.

For a long time my aunt remained ignorant of the nature of the insect that had formed this subterranean dwelling, nor could she obtain any information on the subject, till happening one day to name the circumstance in my hearing, I remembered having read an account of the labours of the leaf-cutter bee in the Encyclopædia Britannica, and I was able to give her the information she desired on the subject. She has since had an opportunity of examining some more of these cells, that were found in an old sand-pit, about half a foot below the surface of the ground.

The upholsterer is another of the same family which builds the cradles of its infant brood with the gay tapestry of the corn-rose. These leaf-cutting bees live in solitude, and do not unite in colonies as the *mellifica* or honey-bee, and the wild bee (*bombylus*).

One of the most amusing among the tribes of the wild bees are those called *muscorum*, or carding-bees. This is a hairy, yellow bee, having the lower part of the body invested with alternate bluish, white, and black belts. It derives its name of carding or moss-

bee, from the peculiar skill displayed in the formation of its nest, which is formed of dry moss. These bees build in the ground; they generally choose some deserted mouse-hole, in mossy low ground, near water. After forming the nest, they throw a sort of arch over it to preserve it from heavy rains. If the nest of the carding-bees be taken to pieces, they will presently be seen to form themselves into a chain from the nest to the spot where their materials have been laid. The foremost lays hold of the moss with her teeth, clears it bit by bit with her feet, driving the unravelled moss under her to the second, and she in like manner to the next in succession, till it reaches the workmen at the nest: this proceeding has gotten the *muscorum* her common appellation of carding-bee.

Since writing the above, I have had the satisfaction of examining a specimen of the nest and comb of the *muscorum*, and am at this very time in possession of a portion of the labours of these very ingenious little workmen.

Kent, our serving-lad, who is a boy of some observation, knowing that I take considerable interest in all natural curiosities, came to me the other day in the garden, and told me he had found a wild bees' nest, if I would like to see it. I, of course, gladly seized the opportunity of examining the nest of these skilful insects, and followed my conductor to the little oval pond in front of what used to be formerly our rabbit house.

Kneeling down on the brink of the pond, Kent pointed out to my notice a little bundle of dry grass and moss that was carelessly put together on the ground. On raising this covering, which was three or

four inches in depth, he displayed to my view a circular nest, all smoothly woven and matted together, like the interior of a bird's nest, to which it bore a great resemblance; the centre of this nest was filled with some curiously-shaped cylindrical pipes, about the size of the end of my little finger. These cells were open, and I could plainly distinguish the honey shining in them, the united labours of about thirty yellow, hairy bees. These little creatures were all busily engaged on the comb: they appeared by no means to approve of our intrusion, so we carefully replaced the covering, and left them for a little time to prosecute their labours.

Anxious, however, to examine the formation of the cells more nearly, that I might afford as much genuine information as possible, I was much pleased in obtaining this morning, a portion of the comb. When Kent brought me the comb, he told me these bees were very commonly met with during the mowing season, in low, marshy grounds, and that he had often seen them at work, pulling the moss and carding it, to make their little nests.

On examining the comb, I found it was composed of a very brown, glutinous sort of wax; the cells hexagonal (or six sided), but irregularly defined, and displaying none of that exquisite neatness and proportion which is so admirable in the labours of the honey-bee. There is as much difference in the style of architecture between the two, as in the rude, primitive huts of the ancient Britains, and the elegant modern structures that adorn the parks and estates of our present nobility and gentry.

Whilst examining the comb, I noticed among the rest a small cell of a soft brownish paste; this was

almost round, and closed on every side from the air. On opening the cell with my pen, I discovered it to be the nursery of eight infant bees in the state of larvæ. These little embryo bees were very white shining maggots, the head being very pellucid, and much clearer than the rest of the body: they were not at all disagreeable in their appearance.

Though the cell in which these creatures were inclosed was without any apparent opening, from its soft consistency I imagine the old bees were able to insert their trunks and give them food, or, may be, to make a regular opening in the wax, without any dis-arrangement of the building.

My observations did not end here. I next noticed at the side of the comb I had in my hand, two regular oval cases, of a whitish substance, like India paper, only as tough as parchment: these cases were perfectly smooth, and quite impervious to the air. Being rather curious to learn what these little inclosed chambers contained, I cut a small opening in one, upon which a young bee, that was concealed within the case, poked out first a pair of black palpi or feelers, and then a droll, black shining head, with a pair of oblong eyes, which looked about as if at a loss to know where he could be. Finding he made no further attempt to free himself from his prison, I cut the case quite open, and he came tumbling out, and thus afforded me an oppor tunity for making my remarks on his form.

The body of the bee was covered from head to foot with long white down; his wings were rumpled and weak. In addition to the palpi or feelers, I noticed a pair of forceps on each side the jaw, and a long trunk of a shining brown colour, almost as transparent as

horn; this was in form like a flat sharp-pointed sword in a sheath. The animal gave me an immediate opportunity of examining this useful instrument; for as soon as he had stretched his legs, which must have been sadly cramped by his late confinement, he made use of it by inserting it into the open cells, and began to make amends for his fong fast by helping himself plentifully to the honey they contained. Indeed, he made such dispatch that I began to apprehend the small stock of honey with which the cells were furnished would not hold out more than a day at furthest, if he continued to enjoy so good an appetite. When he had finished his repast, I noticed that he folded the trunk into two parts, and concealed it beneath his chin. He then proceeded to rub his wings, his head, and his back, by passing his hairy legs over them, which answered the purpose of brushes. His legs and feet he cleaned by rubbing them together.

When I regarded the animal before me, and looked at the cell he had just left, I was almost puzzled to know how so large a creature could have been contained in so narrow a compass; for in the course of a few minutes the bee had stretched himself out to double the size he appeared on his first emerging from his place of confinement. This circumstance reminded me of the story of the Fisherman and the Genii in the Arabian Nights' Entertainments.

The fisherman was surprised that so monstrous a figure and so much smoke could have been contained in a vessel so small as that from which he had issued ; and, moreover, being very much afraid of the genii, he requested him to gratify his curiosity on this point by

returning into the vessel, which he accordingly did; but I fancy my bee would have been somewhat puzzled to have stowed himself in his little cell again. I found upon further observation, that the principal number of the cells that contained the honey had formerly been the nursing cells of the young bees, as the edges of many of them were ragged, like that which I had opened. From the nature of the substance of which these cells are formed, I should imagine the enclosed insect had not the power of freeing itself. This operation, I should think, is performed by the old ones; but that I may ascertain this fact to a certainty, I shall let the other cell alone, and see if the tenant can extricate himself without assistance.

One circumstance I must notice, which is this. In the first soft waxen cell that I opened, no less than eight of the insects in an imperfect state were visible, while the large cases contained but one inmate. Now, it seems probable that as they increase in size, each of these worms is accommodated with a separate apartment, suited to its future wants, and the change it is destined to undergo in its chrysalis state. The labours of the worm are thus described by naturalists:

"After the insect has been introduced to its larger dwelling, it leaves off eating, and proceeds to spinning a fine silken covering to its cell, fastening one end of the silk to the side of the open cell by means of the natural glue with which every species of caterpillar is provided; by degrees it forms a complete roof to its apartment, which is so neatly finished as to defy all attempts towards discovering the point at which the labour of the insect ceased. In this silken tomb the animal undergoes a transformation from the state of

larva to that of the chrysalis or nymph, and from thence to the imago or perfect winged fly."

On closer examination of the edges of the cell, I can distinguish the fine threads that compose the case, and am convinced it is produced by the caterpillar; the tough leathery consistence being caused by the glue which the little weaver employs in the work, and by means of which it renders it so smooth and durable.

In our observations on the mechanism of the bee, we cannot but admire the wisdom of its great Creator, who has adapted every part of the insect's formation to suit its peculiar habits. At first a child is apt to question the uses of different minute and apparently insignificant parts of the creatures he beholds; but let him first be assured that the intellect that planned the great work of creation, made nothing in vain, and that the most perfect wisdom is displayed in all his works. It is not for man to be able at a glance to comprehend the greatness and goodness and power of his Maker; yet the more closely he observes his works, the greater reason will he have to admire and glorify his God.

Simple as the trunk of a bee may at first sight appear, it is a wonderful little instrument, and can collect in one day more honey than a hundred chemists could in a hundred years. The trunk of the bee is long, taper, and flexible, so as easily to be inserted into the nectary of the most complicated flowers: it is composed of two pieces, connected by a kind of plastic spring, which enables the animal to fold it beneath his chin; when not employed in collecting honey, this trunk is made to assist in spreading the wax during the formation of the cells, and serves the purpose of a flat trowel in smoothing the work. The hair which

covers the breast and legs of the bee is also of great use in spreading the wax; and the latter are furnished thickly with this downy covering, to assist in collecting the powdery substance from the petals of the flowers of which the wax is composed.

The hinder legs of the bee are furnished with a hollow, spoon-shaped cavity, which is destined to receive the wax, and this wax is kept from falling during the insect's flight, by means of the hair to which it adheres, but not so strongly but that it can readily be removed on the return of the bee to the hive. I have often observed the thighs of the great bee bombylus loaded with the yellow wax so as almost to impede its movements. The flowers of the poppy, the rocket, and the foxglove, *(digitalis,)* affords a large supply of the powder necessary for the manufacture of bees'-wax.

A new and more approved method of managing the apiary is now becoming very general; it is termed *storying* the bees. Instead of the common straw-hives, which are liable to injury from mice and insects, the apiary is formed with a set of wooden boxes, each box being about a foot and a half in height, and nine or ten inches in width. This box is placed on a block or stand, in a good aspect. The top of the box is moveable, and can be withdrawn when the bees are swarming; a fresh box of similar dimensions, having no bottom, is then fitted to the lower one; this allows room for the young hive to ascend and commence their labours, which they do without molestation from the old bees. Thus the apiary may be carried to a considerable height, and is rendered much warmer and more profitable.

The houses I saw of this kind were furnished with

a glass pannel in the side, which admitted the spectator to look in upon the labours of this industrious little insect: the window was, however, kept darkened by means of a substantial sliding shutter.

This apiary belonged to a young gentleman, a friend of mine, who had purchased the swarm of bees with his pocket-money—this was about two summers ago: his stock is now increased so six boxes, with the produce of which he has been enabled to repay himself the first money laid out, and the expences of the boxes, besides purchasing several very amusing and instructive works on the subject of bees.

There is a very entertaining account given in a letter by an American farmer of the manner he adopted in tracing the wild bees to their hives in the woods, which, as it may not be generally known, I shall extract in this place.

"After I have done sowing on my land, by way of recreation I prepare for a week's jaunt to the woods, not to hunt the deer or the bears, as my neighbours do, but to catch the more harmless bees. I cannot boast that this chase is so noble or so hazardous, but I find it more pleasant, and to the full as profitable.

"I take with me my dog, as a companion only; my gun, for no one ought to enter the woods without fire-arms; my blanket, some provisions, some wax, vermilion, honey, and a small pocket-compass. With these implements I proceed to such woods as are at a considerable distance from any settlements. I carefully examine whether they abound with large trees; if so, I make a small fire on some flat stones in a convenient place. On the fire I put some wax: close by the fire, on another stone, I drop honey in distinct drops, which

I surround with small quantities of vermilion powder laid on the stone, and then I retire carefully to watch whether any bees appear. If there be a hive in the neighbourhood, I rest assured they will be attracted by the smell of the burnt wax; they will then be sure to find out the honey, for they are fond of preying on that which is not their own; and in their approach they wil necessarily tinge themselves with the vermilion, which will adhere long to their hairy bodies. I next fix my compass, to find out their course, which they keep invariably straight when they are returning home loaded.

"By the assistance of my watch, I observed how long a time those are returning back again that are marked with the vermilion. Thus possessed of the course, and in some measure of the distance, which I can easily guess at, I follow the first, and seldom fail of coming at the tree where these republics are lodged; I then mark it; and thus with patience I have discovered not less than eleven swarms in a season, and it is inconceivable the quantity of honey these trees will afford; for, like men, it is only for want of room that induces them to quit the maternal hive to seek a home elsewhere.

"I next proceed to the nearest settlement, where I procure proper assistance to cut down the trees, and get all my prey secured, and then return home with my prize. The first swarm I ever procured were thus found in the woods by mere accident. The body of the tree being perfectly sound, they had lodged in the hollow of one of the principal limbs; this I carefully sawed off, and with some labour and industry brought it home, and set it up in my garden in the same posi-

tion in which I found it growing. This was in April. I had five swarms that year, and have since been very prosperous. This business of bee-hunting generally takes up a week of my time every fall, and to me it is a week of solitary ease and relaxation."

In foreign countries, where bees are made a source of considerable profit, the bee-masters have a method of removing the hives from one part of the country to another, where they may find a greater abundance of wax and honey. This was first practised in Greece, and also in Egypt, and France. We find, by Pliny, that it was the custom in Italy in his time. "As soon," says he, "as the spring food of the bees has failed in vallies near our towns, the hives of the bees are put into boats, and carried up against the stream of the river in the night, in search of a better pasture. The bees go out in quest of provisions, and return to the boat with the stores they have collected. This method is continued till the sinking of the boat to a certain depth in the water shows that the hives are sufficiently full; they are then taken back to their former homes, where the superfluous honey is taken from them." This is still the practice of the Italians who live near the banks of the Po, the river which Pliny particularly instanced.

It was observed by the ancient inhabitants of Lower Egypt, that the blossoming season commenced at least six weeks earlier in Upper Egypt than with them; this remark they turned to their own advantage, by embarking their hives about the end of October, when the inundation of the Nile had just subsided, and sending them up the river so as to reach the upper country just at the season when the buds were unfolding.

The boats thus laden with the hives are floated up the river by slow stages, so as to afford the bees leisure for collecting the wax and honey from the fields. They are then by degrees brought back, after having rifled the rich produce of the fertile shores of Upper Egypt: every day bringing them nearer to the newly-unfolding sweets of their native place, which they reach just as the blossoms expand. Thus, like as a careful shepherd regulates the pasturing of his flocks, the Egyptians feed their bees.

In France they not only practice sending the bees out on voyages, but even load a sort of travelling carriages with them, which are slowly journeying from one flowery pasture to another. Industry like this is rewarded by a plentiful supply of honey at all times, and this delightful liquid is rendered both cheaper and more delicate, in consequence of the fresh flowers on which the insect feeds.

When very young I used to be much gratified by an occasional peep into a glass hive, that occupied a pedestal in the garden of an old lady, who kept the village school in our neighbourhood.

When my eldest brother was about four years old, mamma sent him for a few weeks to this school, just to keep him out of mischief, and that he might learn his letters. It was a girls' school, but the old lady admitted four little boys amoung her scholars, and I fancy she had as much difficulty in keeping these four little gentlemen in order, as in managing all her girls, which consisted of nearly forty boarders and day-scholars.

My little brother had nothing to do all day long after he had twice pointed out his great and small letters,

but to sit on a low form with his three little companions, and wind a bit of red worsted round his thumb, by way of entertainment and occupation. This must have been very wearisome employment; but when the old lady left the school-room to look after her maids, and order the dinner, and visit her fowls, and dairy, and her greenhouse plants, the big girls would lay by their samplers or embroidery, and kiss and caress Tom, giving him cake and sugar-plums, which they had brought for him in their work-bags, for he was quite a pet and darling among them all. He had rosy cheeks, large blue eyes, and curls of golden hair all over his head, and his forehead and neck and arms were as white as ivory. Even the old lady herself would sometimes take him on her lap, and allow him to play with her favourite tom-cat, that occupied a worked worsted cushion at the corner of the hearth-rug. She was very tender-hearted and affectionate, both to her scholars and to the dumb animals that formed a part of her household. As to her cat establishment, it was very numerous; all the superfluous kittens that were littered in the village were brought to her house, that she might have her choice before they were destroyed, and so great was her regard for the feline species, that she seldom found it in her heart to refuse receiving any of the kittens, for she well knew the poor things would hardly meet with so kind a mistress anywhere else.

She had a pet chicken too that ran tame about the house, and two ducks which she hatched in her own bosom. Her lap-dog, a great fat, lazy black spaniel, was the delight of her heart, and the torment of all her visitors. It was an indefatigable beggar; if you were eating a bit of cake, Jet's black-nose was on your

knee, or his paw put up to give you a scratch to acquaint you with his desire of having a portion ; then he would untie your shoe-string, and tread on your toes: besides this, he was so restless, he wanted to go out of the room ten times in an hour, and to be let in again as often, scratching at the door and whining in a very tiresome manner.

But though the least attractive in its appearance, and dull and sluggish in its habits, of all the domestic pets belonging to our old friend, her greatest favourite was a land-tortoise (*testudo*). The manner in which it came into her possession served to render it an object of interest to her.

Returning home one cold dark evening in the fall of the year, from drinking tea at the house of a friend in the village, on approaching her own door she was startled on perceiving, by the glimmering light of the lantern which the maid-servant carried before her, something like a human figure sitting huddled together on the steps of her door. On inquiring the reason of having placed himself there at so unseasonable an hour, the stranger raised his head from between his knees, and looking up with a bewildered air, answered her in hurried accents that were perfectly unintelligible to the good old lady. They spoke however the language of misery —that language which is so plain to every feeling heart, that though conveyed in a tongue foreign to the ear, needs no other interpreter but that which pity easily supplies.

The hatless, shoeless, half naked, and nearly famished speaker, was apparently not more than fourteen years of age; he had been ship wrecked off the coast the night before, and in that dismal wreck had lost his parent and friend. The only living creatures that

were saved from the sinking vessel were himself and a poor tortoise, that had been the companion of Louis during his voyage, and which was brought on shore in the same boat that took him off the wreck. It was the only friend he now possessed.

These particulars were gleaned from the poor lad by one of the teachers, who happened to understand a little French. His simple tale of woe, his famished looks, and tearful eyes, moved the compassion of the kind old lady and her boarders. The ship wrecked sailor-boy was taken in, fed, warmed, and clothed, and *la pauvre tortue*, as he termed his miserable companion, excited the wonder and curiosity of all the young folk. A little subscription was gathered among the girls, and given to Louis; nor did the kindness of his benefactor rest here; she made the story of her poor distressed protegée known to a trading captain, a friend of hers, who interested himself in placing Louis on board a vessel about to sail for Bordeaux, where he had friends living.

Louis presented his friend with his beloved *tortue* at parting; it was all, save the thanks of a grateful heart, the poor boy had to offer in return for the benevolence he had experienced at her hands.

The tortoise was very tame, and made itself very comfortable. During the winter it buried itself in the earth, and when the warm days of spring returned, it came out of its retreat, and walked about the house and gardens, eating all sorts of bitter herbs: lettuce, endive, dandelion, sow-thistle, and such like plants, formed its chief repast.

One day the lady of a neighbouring nobleman came in her carriage to call on our schoolmistress, and

brought her youngest son, a little boy of four years old, with her. This young gentleman had never beheld a tortoise before, and after looking on it for some minutes with great attention, he turned to his mamma and said: "Mamma, I do not like this chicken at all." Her ladyship was greatly amused at her little son's mistake; had he called it a toad, the misnomer would not have been quite so singular; but the little boy was only four years old, therefore it was no wonder if his ideas of comparison should be rather limited.

It was quite a treat in the spring of the year to walk in the old lady's garden, and though she did not like any one to pluck her beautiful hyacinths, and anemones, and jonquils, or to tread over the neatly-raked borders, she was very kind to young folks when they came to visit her, and would shew them every thing worthy of notice in her garden, especially the bees at work in the glass hive. She loved to talk of all their clever ways; of their industry and skilfulness; of how peaceably they lived and laboured together, each seeking not only its own good but that of the whole community. And then she would bid us try to resemble the bees, and study, like those diligent insects, to improve the present time.

The kind mistress of the village-school is dead: her garden, and her flowers, and her bees, have all passed into other hands, and she sleeps quietly by the side of her husband, beneath the green sod of the village church-yard; and when my eye rests on the humble stone that records her name, I recall the days of my childhood, and many happy days long since gone by, when the old couple were living, beloved and esteemed by all who knew their worth.

Sept. 3d.—As my young readers may feel some degree of interest in the fate of my bee, I will not close the chapter without giving some further information as to his behaviour.

In the course of the first two days the voracious creature completely emptied the cell of all the honey contained in them. His wings being too weak to allow him to seek his own living in the open air, I provided him with some sugar and water, with which diet he seems perfectly satisfied, if I may form an opinion from the attention he paid to the comb; indeed, at this very minute, I see him busily inserting his trunk into the liquid, and making a hearty meal.

Since yesterday a great change has taken place in his appearance, The long white down that covered his body on first emerging from his prison, has in different parts assumed a fine yellow tinge; the shoulders are of a deep buff, with two soft black velvet spots, that look very pretty; the body below the wings is now marked with alternate belts of bluish white and black; the legs are covered with shining black hair, and within the second joint of the hind leg I perceive three sharp strong spikes or spurs, which I conclude are intended for the purpose of detaining the balls of wax during the insect's flight through the air: the animal's jaws, feelers, and head, are jet black, and his wings are increasing hourly in strength. He made his first essay at flying this morning, but was very angry on finding himself entangled in the web of a house-spider, whom I encourage in a sly corner of my dressing-room window, for the pleasure of watching his weaving. Mr. Web-spinner came out of a crack in the wall quite in a bustle, and scampered along his

lines to secure his prey, but when he saw what a giant was caught, he made a hasty retreat. A fisherman might as well have attempted to haul up a whale or a shark in his nets, as the spider to catch my bee; he was too cunning to waste his time and strength to so little purpose, so wisely withdrew. The bee broke the net, and came down with an angry buzz upon the sill of the window, where he found more than an hour's employment in clearing his wings and brushing up his black velvets.

Sept. 4th.—Yesterday I had occasion to go out for some time, and when I returned I was surprised to find my other bee had taken the opportunity of my absence to come out of his cell. I was sorry he had deprived me of the gratification of seeing how he effected his escape. Instead of the fine lively bee that my first was, this is a miserable looking fellow with no wings, and his coat is of a very shabby description; however, he was helping himself to some of the victuals I had provided for his entertainment, so I am not without some hopes for his life.

This afternoon I opened my window, as the sun was shining very pleasantly. No sooner did my first-hatched bee feel the enlivening warmth of the sunbeams, than he spread his wings and took flight into the garden below, and flew to the blossoms of a laurustinus' bush, where he began to suck the newly-opened flowers: of course I never expected to see him any more, and having watched him for a few minutes at his labours, I returned to my former employment.

About half an hour ago I heard a loud buzzing at my window, and with much surprise and pleasure I

recognized my old friend. I opened the window with alacrity to admit him, and was amused by seeing him instantly approach the comb and begin to eat, very unceremoniously overturning his poor weak little brother in his haste to appease his hunger. I fancy the fresh air had sharpened his appetite.

Sept. 5th.—My youngest bee died with the cold of last night. I have again offered the other his liberty, which he has accepted. I fancied I heard him at the window two or three times during the day, but he had departed before I could assure myself of the fact.

Sept. 8th.—I have seen nothing more of my bee, so suppose he has joined the parent hive, or sought his fortune in a more distant spot.

These are all the particulars I have been able to collect respecting my winged favourites, the muscorum, or carding-bees; but as they have been the result of my own immediate observation, I think they will afford some amusement to my young readers.

CHAPTER III.

My sister Jane was very fond of reading, and she would oftentimes sit in the summer-house at the bottom of our garden, and read for hours some interesting account of the wonders of nature, both in our own and foreign countries. Indeed I had no objection whatever to her doing so; as it was a little relief from our other studies and pursuits. Among the various subjects she introduced, the following description of the "Pillars of Sand in Africa and other places," and the "Peak of Derbyshire," was very instructive and interesting:—

The Pillars of Sand.

Those pillars of sand which are raised by whirlwinds on the arid deserts have a close resemblance in their appearance to water spouts, only they are composed of substances, between which and the air there is no such surface attractions as there is between that fluid and water. The water spout is generally preceded, and indeed drawn up by a whirling cloud, previously formed in the air, out of the vapour of water contained in that. But in the case of the pillar of sand, there can be no previous sand cloud in the air, and so the pillar must begin at the surface of the earth, and must originate and be sustained by mechanical action alone.

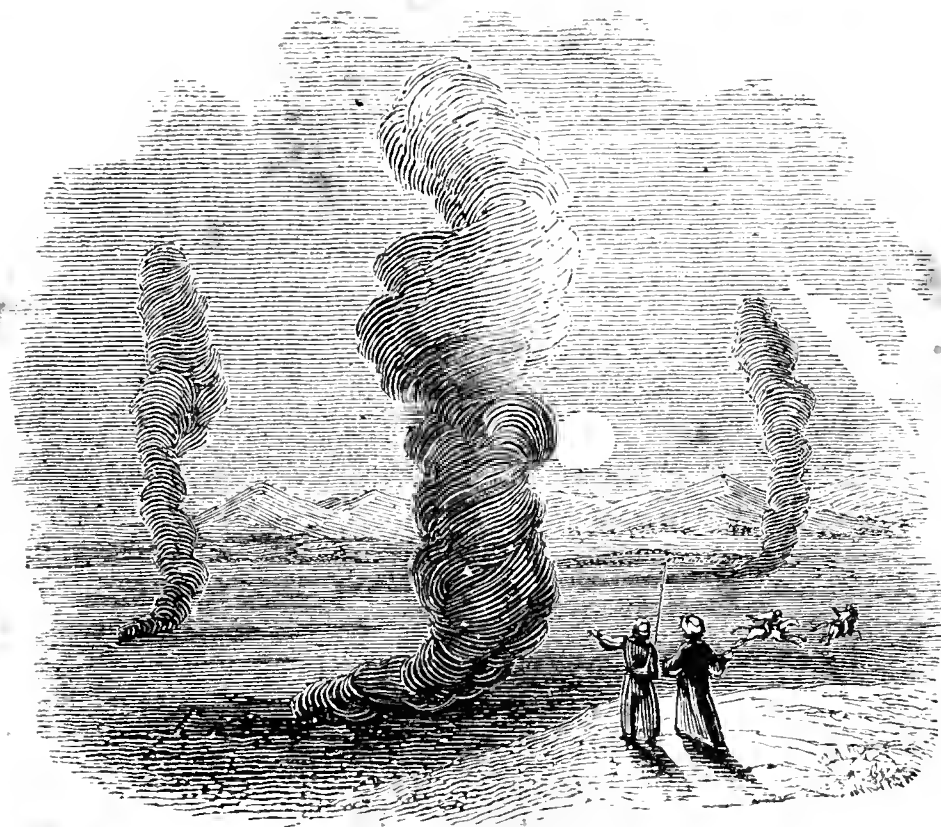
The places where these pillars most frequently occur, are those portions of the deserts which are much diversified, and especially those which are near to a river or the sea. In the African deserts, near the Red Sea, the Nile, the central rivers to which the desert approaches the most nearly, and the vicinity of the oasis or fertile spots, are perhaps the places of their most frequent and most formidable appearance. But after the pillar has once been reared, it may march into a place where it could not have been originally formed,—and one is mentioned by Adamson, as having crossed the Gambia, where that river was of considerable breadth and navigable.

Sand pillars are by no means confined to the African deserts; for, like all other natural phenomena, they must occur in all places where circumstances are favourable to their production. These circumstances are, loose sand upon the surface, and contrary currents of the atmosphere sufficiently powerful for raising that

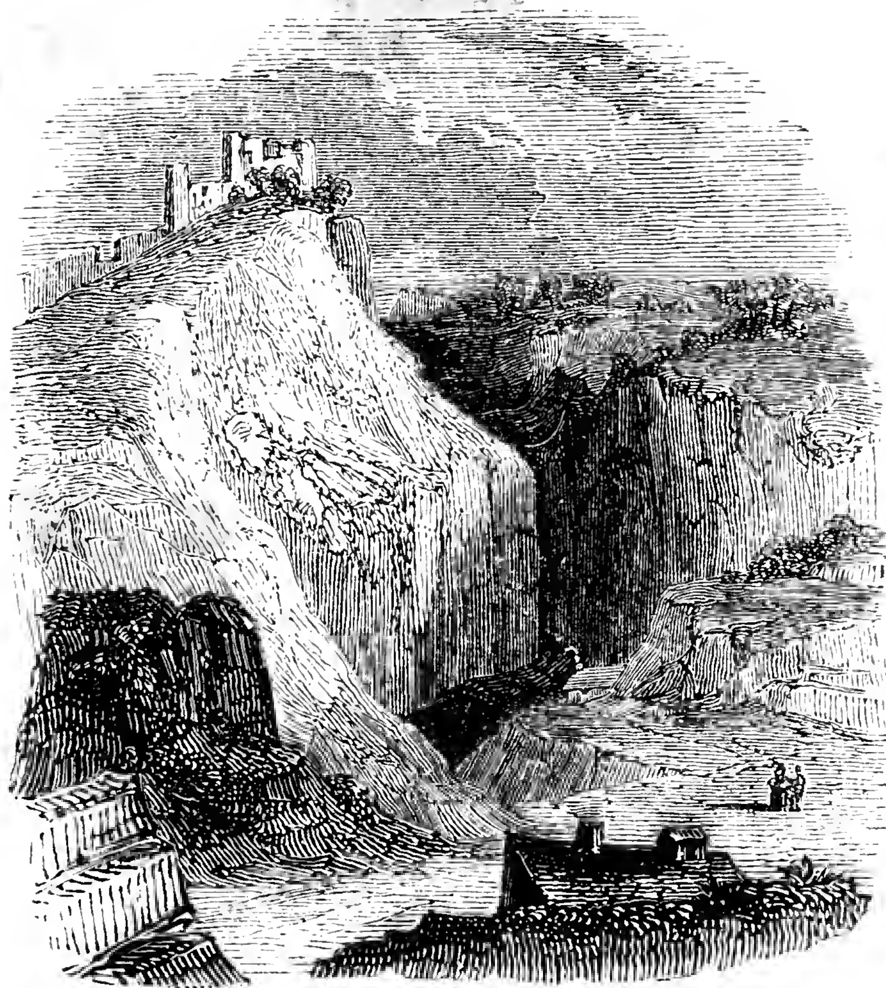
sand. The action necessary for raising sand, the particles of which are of any given size, is a matter that does not admit of calculation; but it is evident that the more rapidly the air of the whirlwind revolves, the weightier must be the matters that it can raise, and the thicker and more lofty must be the column. The height must, however, depend a good deal upon that to which the whirlwind extends, because the sand cannot be sustained in still air, like a cloud of aqueous vapour.

The forward motion of the pillar depends of course on the rate of the wind or general current of the atmosphere; and this has no necessary relation to the whirlwind and its pillar. It may, however, very much modify the appearance, for though the pillar, the water spout, or simply the whirlwind without either, may and must resist the general current of the wind to the same extent, that extent cannot be great. There are many modifications that take place in a lofty pillar, from the general action of the wind. It may be borne forward or backward, according to the rate of the wind at different elevations; but when bent, the top leans forward, as with the wind; and it cannot attain so great a height in a strong wind as when the air is calm.

The reason of this can be very easily seen; and there are illustrations of it in those clouds of dust which are raised from our common roads by the whirlwinds of summer,—these never rise to any considerable height above the surface, and they seldom approach the columnar form; but the top is always in advance of the portion next the surface; and they sometimes march a little way across the field before falling in a



Pillars of Sand.



The Peak, Derbyshire.

shower of dust. The reason of their leaning forward is the friction of the surface of the ground, which extends the motion of the wind there, so that it never blows with the same velocity as it does at some elevation; and, as the whirwlind which raises the dust or sand, always moves a little slower than the air that carries it, and slower still as that wind has less velocity, the dust or sand not only indicates a slower motion than that which the wind actually has, but this slowness is greater as the velocity of the wind is less.

The nature of the the surface, too, has a considerable effect upon the velocity of the surface wind; and this is one of the reasons why pillars of sand are of considerable dimensions only where the surface is comparatively flat, although a powerful atmospheric action is necessary to their having those dimensions which render them formidable. Indeed, there is rarely in Britain, or any other portion of the temperate or cold latitudes of Europe, any land whirlwind of such power as to raise a pillar of absolute sand, though near the surface the revolving of the winds accumulates sand hills or *dunes* of considerable size, the surfaces of which are marked and shifted by the winds like wreaths of snow, or the furrows made on sandy beaches by the action of the waves.

In the south of Europe, where the seasons more resemble the tropical alternations of rain and drought, whirlwinds have more power; and, accordingly, pillars of sand are frequently seen rushing about upon the sandy plains of Estremadura in Spain, and Alentejo in Portugal. In respect of time, they are most frequent about the season when the weather is about to change from dry to rain, just as our whirlwinds and dust-clouds are most frequent when the earth has been dry for

some time, and a summer shower is about to fall. In respect of locality, they are generally near the banks of the Guadiana, and it is probable that they cross that river just as those of the southern part of the great African desert cross the Senegal and the Gambia. The elevated ridges which extend across the Peninsula, the mountains of Toledo, and their continuation into Portugal on the north, and the Sierra Morena, with their continuation to the mountains of Alsarac on the south, interrupted only by the pass through which the Guadiana flows, together with the cross action in the swelling of the river from its flexure of Badajos southward to the sea, are the main causes of whirlwinds in this region. There is a general atmospheric current, eastward or westward according to the season, in the valley between the two ridges of mountains; and there is another current northward or southward along the channel, or proper valley of the lower part of the Guadiana. These two currents meet somewhere near Badajos; and this is the grand cause of the frequency of the whirlwinds and sand pillars in the vicinity of that city. The plain of Alentejo on the right bank of the Guadiana, and that of Estremadura on the left bank, are not quite like Sahara in their permanent aspect and character. But, occasionally, they have a resemblance to it; for when the drought has continued long, which it does every year, the whole herbage disappears, and the surface is, by the solar action, disintegrated as well as heated, it becomes far more sensitive to the ordinary action of both the atmosphere and the sun, than if it were clothed with vegetation. During the day, it becomes a sort of furnace, as it were, from which the heated air ascends like smoke, and the cooler air from the river and the fertile parts

of its banks, as well as from the mountains, comes in to supply its place, with velocities differing according to the relative temperatures of the several portions. These are the winds which strive with each other upon the plains, and cause the whirlwinds that produce the pillars of sand and dust.

The pillars are, as has been said, always near to the bank of the Guadiana; and when they move, their motion is in general in the same direction as the current of the river, and when the atmosphere is still, nearly at the same rate.

This shews that, although in the states of the atmosphere to which we have alluded there be no movement of the air at all perceptible by the rivers, that portion of the air which is over the stream, and the banks for some distance upon each side, must be borne downward at nearly the same rate that the current flows.

In the African deserts, where drought prevails still more than it does on the plains near the Guadiana, and where natural action is altogether on a larger scale, the pillars of sand are more majestic, though they do not even there deserve all the descriptions which have been given of them; for both on account of the superior weight of sand to water, and of the want of surface-attraction between sand and air, no whirlwind can raise a pillar of sand, the top of which can expand into a sand-cloud, be carried to a distance, and fall in a shower as is the case with the rain-cloud produced by a water-spout.

The pillar has at least one of the effects of a water spout, that is, the atmosphere may be so much electrified by it as to produce lightning. This is, indeed, the case in all motions of the atmosphere which are suffi-

ciently violent, and where there is any substance in the disturbed air that can act as a rubber. It is not absolutely necessary that the motion producing this electric state should be a revolving one; for an ascending current, if strong, loaded with vapour or dust, can also produce lightning, and loud thunder if upon a great scale. The ascent of vapours from our common fires, or even the most intense of our artificial furnaces, never excite the air to such a degree as to occasion lightning; but in the grand furnace of nature the effects are different; and when the larger volcanoes are in a state of excitement, lightning and thunder of the most formidable character are produced, not only by the action of the column which ascends from the crater, but from the vapour over the streams of lava, as it burns along the surface. In the time of great eruptions the matters discharged from the crater ascend with too much force for being effected by any wind, but as the ashes are frequently in exceedingly minute divisions as well as calcined to absolute dryness, they sometimes fall in deluges upon the plains, whelming cities in the most terrific ruin that can well be imagined.

The Peak of Derbyshire.

There is no county in England which presents so great a variety of scenery as Derbyshire, and where the northern and southern parts exhibit such a striking difference and contrast in geographical features: the former abounds with hill and dale, and often the scenery is romantic and sublime. The country gradually rises for about fiteen miles northward, and then more abruptly, and afterwards begins to assume that

mountainous appearance which it continues to possess to its extremity. A chain of hills appears, which extends to the borders of Scotland. They are at first of small elevation, but being in their progress piled one on another, they form very elevated ground in the tract called the High Peak. The most considerable, however, are Axe Edge, 2100 feet higher than the level of Derby, and Kinder Scout, 2000 feet above the level of Buxton. The southern part of Derbyshire is a pleasant fertile country; the banks of the Trent form range of low meadows, for the most part well cultivated.

In the more northern parts of this county, there are some remarkable caverns and fissures—the most striking are Pool's Hole, the Peak, and Elden Hole.

Pool's Hole, situated at the foot of Grindon Hill, about half a mile west of Buxton, is a vast cavern, formed by nature in the limestone rock. The tradition of the country says that it was once the resort of a daring outlaw named Pool. The entrance is low, narrow, and repulsive, but within, it progressively widens to a lofty and spacious cavern, the roof of which is beautifully adorned by pendant stalactites. The droppings of the water laden with calcareous matter falling on the rugged floor, form many masses of stalagmite, which the imaginations of those who shew the cavern have assimilated to many articles of common life. In one place are pointed out a petrified turtle, a flitch of bacon, and a rude mass, called Old Pool's saddle, a woolpack, a chair, a font, a lady's toilette, a lion, and the pillar of Mary, Queen of Scots. These bodies are daily increasing, producing a great variety of curious figures. At the spot termed the

flitch of bacon, which is a large water icicle hanging from the roof, the cavern becomes somewhat contracted, but beyond this part it grows wide and lofty again, and continues so until you come to the Queen of Scots' pillar, a name given to a large massy column of stalactite, on account of its having been visited, according to tradition, by that unfortunate princess during her visit to Buxton.

As the pillar cannot be passed without difficulty and danger, few persons venture beyond it. Nor does this seem desirable, for by proceeding thus far a pretty complete idea of the cavern may be formed. The path hitherto lies along the side, and at some height from the bottom of this subterraneous passage; but to visit and examine the interior extremity it becomes necessary to descend a few yards by very slippery and ill-formed steps. At first the path at the bottom is tolerably even and level, but at the distance of twenty yards from hence the passage rises with a perpendicular ascent to the height of about eighty yards. As it is difficult to climb up, it seldom happens that an attempt is made by those who are led by mere curiosity into the place; however, it is customary for the guide to fix a candle at the extremity, which to those who stand below has a singular and beautiful effect. The way of returning is at the bottom of the cavern, and the visiter passes under the Queen of Scots' pillar. By thus changing the route an opportunity is furnished of better ascertaining the height and width of the cavern in every part, and of viewing other portions of stalactite, some of which are of prodigious size and wonderful form. On returning to the narrow passage by which you entered, two cavities are shewn in the rock;

one is called Pool's chamber, and the other his closet. The whole length of this subterraneous passage is about 769 yards; it belongs to the Duke of Devonshire, and is granted by him to nine old women, who act as guides, and receive the money given by visiters. Above Pool's Hole, on the side of the hill, are the kilns and limestone quarries, which give employment to more than a hundred families.

The Peak Cavern, near Castleton, which is sometimes also called the Devil's Cave, is deservedly classed as the greatest amongst the Wonders of Derbyshire: it is one of those magnificent and sublime operations of nature that must excite the admiration and wonder of every beholder. It is within a hundred yards of the town, in a fissure or separation of the rock: a narrow path by the side of a clear sparkling stream leads to this celebrated place. A high bank is so situated as to prevent a view of it until the traveller is near enough to be fully aware of its dimensions, and feel the power of its grandeur; it then bursts upon him in all the vastness of its character. On each side the huge grey rocks rise almost perpendicularly to the height of nearly three hundred feet, and meeting each other at right angles, form a deep and gloomy recess. In front, the mouth of the cave, overhung by a vast canopy of impillared rock, assuming the appearance of a depressed arch, strikes the mind as solemnly grand. This natural arch is regular in structure, and extends in width one hundred and twenty feet, in height forty-two, and two hundred and fifty feet in length. In this entrance, or first cavern, a singular combination is produced; human habitations, and twine manufacturing machines, blending with the sublime features

of the natural scenery. The various discordant noises occasioned by the spinners tend greatly to disturb the still solemnity of the spot, and sadly impair the effect which its vast character is eminently calculated to produce.

After passing through the first cavern, a distance of about thirty yards, the roof becomes lower, and a gentle descent conducts by a detached rock to the interior entrance. Here, the light of day, which gradually grows dimmer, wholly disappears, and torches are required. During his progress the visiter passes through different caverns, known by the various names of the Grand Saloon, Roger Rain's House, the Devil's Cellar, Half-way House, Devil's Hall, Gloucester Hall, and last of all the Bell House, or Great Tom of Lincoln, etc. In exploring the deep recesses of this passage, it is necessary to pass and repass a current of water twice, either by means of a boat, or on the shoulders of the guide. The stream which courses its way through this series of caverns buries itself in the earth at a spot called Perryfoot, about three miles west of Castleton, on the Buxton-road; it afterwards passes through Speedwell-mine, and re-issues into day at the great entrance into Peak's Hole. The imagination of the man versed in classic lore might almost fancy himself crossing the Styx, in the fabled bark of Charon, so deep is the gloom, and so tremendous the scene around him.

The entire length of this wonderful cavern from its entrance to its close is about 2,250 feet, and its depth from the surface of the mountain 621 feet. From different parts of the cavern communications open with other fissures. In extremely wet weather the interior

cannot be visited, as the water fills up a great portion, and rises to a considerable height even near the entrance. At other times the access is not difficult, and quite safe.

Another of the reputed wonders of Derbyshire is Elden Hole, situated at no great distance from Castleton, on the side of a gentle hill to the north-west of the village of Peak forest. Unassisted by fable, and the legends of credulous tradition, there is nothing very extraordinary in this fissure: it is simply a deep yawning chasm, entirely devoid of any pleasing appendages.

This immense gulf, which is about fourteen yards long, seven wide, and sixty deep, has often excited both astonishment and terror. So early as the reign of Elizabeth, the Earl of Leicester is reported to have hired a man to go down into Elden Hole for the purpose of ascertaining its form and dimensions. The account of this experiment says, "He was let down two hundred ells, and after he had remained at the length of the rope awhile, he was pulled up again with great expectation of some discoveries, but when he came up he was senseless, and died within eight days of a frenzy."

The entrance to this cave is not horizontal but perpendicular. It is a deep chasm in the ground, extending lengthways in the direction of north-west and south-west. Near the surface it is about ten yards wide and thirty long; but from hence it gradually contracts, and at the depth of ninety feet the passage is much diminished and confined. In this part there is a projection of the rock, and behind a small cave, which, from the quantity of light in it, seems to have

a communication with some place near the surface. Between fifty and sixty years ago, Mr. Lloyd descended into this gloomy abyss, explored the depths, and the capacity of its interior recesses, and dissolved the mystery which until then had hung over it. He says he descended through the narrow aperture into a little cave about four yards long and two high, which was lined throughout with a kind of sparkling stalactite, of a fine deep yellow, with drops hanging from the roof. He also found a noble column above ninety feet high, of the same kind, facing the entrance. As he proceeded to the north, he came to a large stone which was covered with the same substance, and under it he found a hole two yards deep, which was uniformly lined with it. From the edge of this hole sprung up a rocky ascent, sloping like a buttress against the side of the cavern, and consisting of vast solid round masses of the same substance and colour; up this ascent he climbed to the height of about sixty feet, and obtained some fine pieces of stalactite which hung from the craggy sides of the cavern that joined the projection he had ascended. When he had got down, which was not effected without great difficulty and danger, he proceeded in the same direction, and soon came to another pile of encrustations, of a different kind of colour, these being much rougher, and not tinged with yellow, but brown. At the top of this he found a small cavern opening in the side of the vault, which he entered. Here he saw vast drops hanging like icicles from every part of the roof, some of which were four or five feet long, and as thick as a man's body. Mr. Lloyd descended about sixty yards to the bottom. In one part of the principal cavern he discovered a

fissure in the rock, from which a strong current of air proceeded ; this, however, he could not examine, as it was nearly filled up with large stones that appeared to have been rolled upon it. This aperture, the miners say, communicates with a lower shaft of vast depth, with water at the bottom.

CHAPTER IV.

Just below the two great nut-trees in our garden, my father had caused a potato-pit to be dug for the better preservation of that useful root from the frosts of winter. This pit was about ten feet in length, six in width, and four in depth; during the time it remained unoccupied, it formed a favourite place of amusement for my sisters and me. As soon as tasks were completed, and work laid aside, we used to hasten to the pit and try our skill in jumping into it, one after the other, and then running up a plank, which was placed in a slanting direction on one side.

But one day, when we approached the pit to commence our sports as usual, we discovered an odd-looking ball of bristles lying in one corner among the fallen leaves of the nut-tree. This ball of bristles, as we termed it, was a hedgehog; but never having seen one of these singular animals before, we did not know what to make of it. At first we dared not go very near to it, lest it should bite or otherwise hurt us; but finding it lay quite still, we ventured near enough to make our observations on its form. We were not a little puzzled on perceiving neither head, nor tail, nor

legs; nothing more than a mere round ball of sharp spines met our view, and these pricked our fingers when we touched them, like the thorns of a furze-bush.

While we stood gazing on the hedgehog, and wondering how it was possible for it to eat without a mouth, see without eyes, and walk without legs, mamma came into the garden; and on our communicating to her the wonderful discovery we had made, she speedily put an end to the mystery by explaining the nature and name of the animal; assuring us it was perfectly harmless, belonging to a tribe of very inoffensive quadrupeds called *erinacei.*

"Among the inferior animals," she observed, "there is not one that has suffered greater injury from the effects of ignorant prejudice than the hedgehog.

"Having had frequent opportunities of observing the habits of these creatures, I can with great confidence bear witness to their innocent and even useful mode of life.

"Country people assert that hedgehogs are very hurtful animals, and ought to be destroyed; declaring that they kill young poultry, rob the hen-roosts of eggs, devour the choicest fruit of the orchard, and, above all, suck the cows at night in the pastures, with many other charges equally unfounded.

"To convince you of the impossibility of the last accusation, you need only examine the formation of the animal's mouth, and you will perceive from its size that it could not suck the cows, neither would a cow admit so rough and prickly a creature to approach her tender dug; she would soon teach the intruder to keep at a more respectful distance. Then with respect

to its carnivorous qualities, let me tell you, the hedgehog is not fitted by nature to become a beast of prey, being slow in its movements, and unfitted either for offensive or defensive warfare. Its only means of preservation from its enemies is the bristly coat with which nature has kindly provided it. When attacked by any other animal, instead of seeking refuge in flight, the hedgehog immediately stops short in its career, and rolls itself into a ball by bringing the point of the nose and the hind feet in contact, and concealing the fore feet under its chin; leaving no part of the body exposed to view but the back, which is well defended by its sharp spines. The more it is annoyed by the enemy the closer it coils itself up: by this quiet mode of defence it effectually wearies out its antagonist, showing that patience and perseverance, joined with a wise forbearance, will do more towards repelling unprovoked malice, than a fiercer and more combative mode of proceeding. As to the charge brought against my poor protegée, that of destroying the fruit, I can only say, that many learned naturalists have defended him from the charge of climbing, but have acknowledged that he humbly takes such fruits as fall to the ground, a privilege which no reasonable person would be disposed to deny him.

"The usual food of the hedgehog consists in several sorts of roots, especially that of the plantain, which it digs up with its snout, gnawing the root off just below the stem: they likewise turn up the ground in search of ground-nuts, which are also called pig-nuts, from the hedgehog or hedgepig making them a principal article of food: beech-moss, horse-chestnuts, kernals of many kinds, all sorts of hedge fruits, and berries,

they will eat; but insects are their favourite provision: slugs, snails, flys, beetles, grubs, and earthworms, they greedily devour.

"The hedgehog sleeps during the very cold part of the winter. Preparatory to this season it forms for itself a comfortable warm nest in the ground, under the shelter of some dry bank, or at the roots of an old tree, where with the help of its snout (which is formed like that of the common hog) and its fore feet, it hollows a large cell, which it lines with moss, dry grass, and leaves; thus defended from the attacks of enemies and the rigour of the weather, it sleeps away the cold days of winter. The nest it makes for the reception of its young is larger and more abundantly supplied with moss and dry herbage. The female produces four or five young ones in the spring. The little hedgehogs are naked at first, and blind, like the generality of the smaller quadrupeds; at the end of a few weeks they are clothed with soft bristles, which gradually acquire greater strength as the animal increases in size. These poor inoffensive animals are often caught in the traps set for hares and rabbits; they are sadly tormented by cruel boys, who take delight in poking them with sharp sticks, to make them unroll themselves; but this they will not do unless thrown into water.

"Gipsies catch and eat them as food: some of these vagrants have assured me they are excellent when roasted."

Whilst mamma was giving us these particulars, our little captive had unrolled himself, and was taking a quiet survey of his prison; from which mamma told us he could not escape, having no power of climbing

the steep side of the pit, and that if we fed him with fruits and vegetables, he would become perfectly tame and domestic.

We were very much amused by watching his movements. The first thing he did was to search the sides of the pit very diligently for insects and worms, which latter he very expertly drew out of their holes, and sucked up into his mouth. He did not suffer the smallest insect to escape him; as to slugs, he ate them with as much apparent relish as some persons do oysters.

As Peter (for so we named our hedgehog) had no nest to sleep in, such as mamma had described, Jane and I resolved on building him a house. For this purpose we made a collection of small sticks, which we stuck into the ground at the distance of a foot apart, weaving the tops of the twigs together, and interweaving the spaces at the sides with other smaller sticks; we then thatched it with straw, and lined the interior of the little dwelling with moss and hay, making it as warm as we could for his accommodation; and great was our satisfaction when the house was finished, and still greater our delight to see the new tenant take possession of the domicile of his own accord. He used to retire to his hut during the heat of the day, coming out and ranging about the pit towards evening, and after showers, for then he was sure to meet with a plentiful repast off snails, and slugs, and worms, and black beetles.

In a few days' time Peter grew so sociable that he would come trotting forth to meet us when he heard our steps in the garden, and take from our hands fruit, bread, nuts, and cake. You may be sure our rough

favourite was never neglected, and many were the nuts we slyly cracked, and dropped down into the pit for Peter; and we never failed of saving a portion of our fruit at the dessert for his benefit.

One day we wished to know whether our hedgehog would eat boiled potatoes, and accordingly I went to the cook to request one for him. Now the cook, though a clever servant, was a very ignorant woman, and, moreover, of a most savage disposition. Instead of giving me what I asked for, she said she had no notion of encouraging such vermin, for they killed young chickens and sucked her cows; old Joe Spilling said they did, (that was the farming bailiff, who was our '*cook's oracle;*') and added, she would soon kill the hateful beast. It was to no purpose I told her all that mamma had told me about this harmless animal: cook refused to listen to my defence of Peter and the rest of his race, and in spite of my passionate pleadings, she armed herself with the meat-fork, and hastened to the potato-pit with the barbarous design of killing our beloved Peter, whom she accused of having dried her best cow Strawberry, by sucking her of a night when she was asleep. Cook would assuredly have executed her cruel purpose, had we not fortunately encountered papa at the garden-gate; when informed of her intention of killing our harmless protegée, papa reproved her with great sternness for her want of humanity, and took the trouble of explaining to her the nature of the animal, and the impossibility of its injuring the cows; but though cook was forced to give up her murderous design, she would by no means give up her opinion as to the demerits of the species: ignorant people do not choose to be convinced of the error of

their opinions, and she obstinately persevered in hers, that "Hedgehogs were very *mischieful varmints.*" We cared not so that we had succeeded in saving the life of our friend Peter from her vengeance.

I must inform you that Peter found Jane and myself plenty of employment in rebuilding his house, which he generally contrived to knock down once or twice in the course of the day. I suppose it was routing about under the straw to keep himself warm, or else to search for insects, that he discomposed the frail edifice, and by his bustling broke the sear sticks that upheld the roof of his domicile, and brought it in ruins about his ears. Be it as it may, we thought it incumbent on us to make him a new house whenever he thought fit to knock down the old one.

Just before the cold weather set in, Peter mysteriously disappeared from the pit. What became of him we never knew; whether he contrived to effect his escape by walking up the board which had been left accidentally in a slanting position at the side of the pit; whether he burrowed himself a retreat under ground; or whether, as we feared was the case, he fell a victim to the cruel prejudice of the cook, or the gardener's lad, we could not exactly discover; at all events, we never saw our favourite again.

One day as I was walking through the plantation by myself, hearing a rustling among the dried leaves that strewed the pathway, I looked about, thinking the noise might be occasioned by a snake, for though it was autumn, the weather was exceedingly warm; presently I perceived a funny brown beast walking in my path, with a sober and steady pace. It was a hedgehog. The little creature betrayed no sign of

fear at my approach, and continued its travels without attempting to run away, or to roll itself up; now and then it stopped still, but on my touching its bristly back with a long stalk of dried grass which I held in my hand, it walked leisurely on before me for some distance, when suddenly my quiet little companion made a pause, and indicated its intention of going no further. In vain I urged its progress with my little wand: the wand had lost its power of enforcing obedience; the hedgehog was obstinately bent on proceeding no further, and prepared to act on the defensive, by gathering itself into a ball. While thus engaged, it whined and trembled excessively, evidently through fear. While I was wondering within my own mind at the sudden change observable in the conduct of my new acquaintance, Rover, whom I had not before noticed, came bounding towards me across the meadow, and finally burst his way through the underwood of the hedge that separated us from each other, and sprang up the bank into the plantation; but when within a few paces of me, he noticed the poor little hedgehog, and immediately began barking and baying, and showing his teeth in a truly savage manner. After expressing the most decided disapprobation at its vicinity, he ventured to approach the object of his displeasure, with the intention of rolling it over with his paw, but my wary little friend had prepared himself for the attack, and presented a ball of sharp prickles to his adversary, which wounded his paw, and made him draw back a few paces.

In spite of this rebuff, Rover returned to the assault, and was again received at the point of the hedgehog's spines; at length Rover's courage began to cool a

little, and he contented himself only with annoying his prickly foe at a respectful distance, barking furiously at him, quite regardless of my commands for him to be quiet. At the first part of the onset I began to entertain some apprehensions for my harmless little friend, but finding he maintained the advantage over his enemy, I quietly sat down on a mossy bank, under the shade of my favourite beech-tree, near the scene of action, that I might observe their proceedings; secretly admiring the sagacity displayed by the poor hedgehog in having so timely provided against the approaching danger: and I felt disposed to praise the goodness of that Being, who had thus armed one of the most helpless of his creatures with weapons sufficiently powerful to resist the attacks of a beast more than ten times its size, and yet be incapable of hurting or annoying any creature in the way of combat. Thus do the weak often confound the strong, beneath the guidance of that Intelligence which ruleth over the animal creation.

After having quite wearied himself with his fruitless exertions to overcome the hedgehog, Rover quitted his post, and gladly followed me home, leaving his innocent foe to retire unhurt to his secret retreat among the bushes.

I forgot to tell you that after the departure of Peter, we fixed very affectionate regards on a beautiful squirrel (*scuirus*) that we detected several times during the autumn, cracking nuts in one of the great nut-trees.

This pretty creature was one of the largest and finest of his species, but so wild, that he constantly fled at our approaching within sight of his haunts; leaping

with the most surprising agility from bough to bough, and from tree to tree, till he had effected his escape. This elegant creature was of a rich red brown, the fur being unusually long, the throat and belly of a pale buff, almost white; the tail large and bushy, spreading quite to the ears, so as to cover the back: the extreme beauty of this useful appendage was increased by a fine cream-coloured stripe, beautifully blended with the hazel colour of the rest of the fur. His eyes were large, bright, and piercing; his teeth long and sharp.

This squirrel became an object of the most lively interest to us. I have spent hours in watching for its appearance among the boughs of the old nut-trees: but he was too cunning often to make his visits when we were in the garden. We found out, some months afterwards, that Mister Squirrel had a nest in one of the old hollow elms that grew at the back of the rabbit-house; but when the gardener raised the ladder, and went up the tree to try and catch him, he found that the nimble little gentleman had taken the alarm and had left the nest, and was off and away to the woods.

The nest was fixed in a hollow place, between the forked branches of the tree; it was most curiously woven with dry twigs, and lined with moss, hay, roots, and dry leaves, with a portion of the innocent creature's own soft fur.

In another hollow branch was found his winter magazine of nuts, filberts, kernels, and corn, which he had providently laid by as a reserve, till the returning spring should enable him to procure other food, such as the tender buds of the birch and elm, and the young cones of the pine and larch-trees, of which these animals

are remarkably fond. The nest of the squirrel is formed with a sort of conical roof, so as to throw off the rain, and also defend the little tenant from the rays of the sun, which it seems rather to shun, though at the same time they are careful to screen themselves from the effects of cold and frost. They sleep a considerable portion of time during the winter, and are very economical over their hoards of provision.

I have heard it observed that squirrels, dormice, and other of the smaller quadrupeds, seem to have an intuitive knowledge as to the severity and length of the approaching winter, laying up a larger store in proportion to their probable consumption. How is this knowledge acquired ? To whom does the little animal apply for information on the subject? He has no books by which he can calculate the times and seasons, or study the courses of the stars, or the prevalence of those winds that bring frost and snow. Man is often mistaken in his conjectures, but his little brute companions never err. They lay up for themselves a sufficiency, and no more; like the provident Israelites gathering the manna in the wilderness, those that gather little have no lack, and those that gather much have nothing over. We are taught by the wise writer of Proverbs, to go to the ant to learn wisdom: the locust, the spider, and the coney, also shall teach us lessons of understanding. Man errs because he trusts to his own reason, which is often weak, and obscured by clouds of error and prejudice; but the simple inhabitants of the field err not, because God is their wisdom. They are governed by those unerring laws of instinct, which are perfect, because guided by *infinite perfection*; even He who provideth the young ravens with food,

and clotheth the lilies of the field with their robes of exquisite beauty.

We might often gather very valuable hints from the economy observable in the animal world, if we would but pay due attention to their ways. Our blessed Lord himself taught a useful lesson of reliance on the goodness of our heavenly Father, by shewing how much care he extends over the fowls of the air. "Consider the ravens; for they neither sow nor reap, which have neither storehouse nor barn: and God feedeth them:" and then for our encouragement he adds, " are not ye much better than they?" and again, " shall he not also clothe you, O ye of little faith."

Papa had a tame squirrel when he was a young man, and this squirrel was so fond of him it would creep into his bosom, climb his shoulder, hide itself in his hat, or get into his pocket to look for nuts, or cakes, or apples, and rub its soft head against his hand.

One day papa went to dine with a friend, at whose house there was assembled a large party. Having occasion for his handkerchief, he put his hand into his coat-pocket to draw it thence, but his hand encountered something softer than the silk handkerchief; it was his little squirrel's velvet head. The harmless thing had crept into his master's coat pocket, and had fallen fast asleep. This circumstance gave great delight to some young ladies and gentlemen present, who soon made themselves familiar with the inoffensive intruder.

We had a serving-lad named William Hay, whose father followed the occupation of woodman to a neighbouring nobleman; this boy told me that he had often taken the squirrels' nests when at work with his

father in the woods. The old squirrels, he said, would bite and scratch when any one attempted to get the young ones, and though so timid at other times that the sound of a falling bough would make them jump and skip away, when they had little ones they would stay in the nest to defend them, or keep on the upper boughs of the tree, making an angry noise.

I was very much amused by hearing this boy relate the behaviour of the squirrels towards their rivals, the nuthatches.

"The nuthatch, miss," said he, "is a brown speckled bird, with a very strong beak, that feeds on nuts; but she has no paws to hold her nut fast with while she cracks it, as the squirrel has: so when she has got a nut, she flies with it to some old gnarled tree, where she may find a chink or crack, into which she fixes her nut, and when she has got it to stand quite steady, she goes nick-nack, nick-nack, with her bill on the shell, till she has made a hole in it big enough to let her pick out the meat: many is the empty shell I have found in the chinks of the trees when I have been birds' nesting in the cushwood. Now, miss, when the squirrels hear these birds at work, nack, nack, nack, at the nuts, they know there is something to be got without much trouble, so they will run, and jump, and leap from tree to tree, till they find the poor bird, and then they drive her away, poor dear, and get her nut, that she had taken such pains to fix steady for her purpose. "Depend on it, miss," he would add, "those squirrels are proper cunning little fellows: for my part, I do not set much store by them, because they are such wicked thieves."

This account exactly corresponds with what natural-

ists have observed respecting the conduct of the squirrel towards the nuthatch, so that I have inserted it with greater confidence, as it serves to prove the observations that had been made on the subject were perfectly correct. Buffon and other writers on natural history have furnished us with many very interesting particulars of this elegant little animal, particularly of the grey squirrel of Lapland, and the black squirrel of America. The following description of their passage across the lakes and rivers of the country is very interesting.

"In their journeys from one part of the country to another, when it becomes necessary to pass a lake or river, which is frequently the case in Lapland, they lay hold of a piece of pine or birch-bark, which they draw to the edge of the water, mount upon it, and abandon themselves to the waves. They erect their full bushy tails to catch the wind; but if it blows too strong, or the waves rise high, the little pilot and his vessel are both overset. This kind of wreck enriches the Laplander, who collects the dead bodies, strips them of their fur, and prepares it for sale."

Some writers think they merely swim in the water, using their tail as a rudder, or as a sail to expedite their voyage.

The following account of the striped squirrel of America is thus given:—

"These animals, like the common squirrel, provide in autumn a winter store of provisions; only, instead of storing it in trees, they bury it in the earth in granaries they dig for the purpose. Their holes are very deep, and commonly divided into many branches; from each of these they have an opening to the surface

of the ground. The advantage they derive from this is, that when they are rambling about for food, and are prevented by any accidental cause from entering the hole at which they went out, they may not expose themselves, but retreat to another; but in autumn, when the leaves are falling from the trees, it is very diverting to observe their consternation when pursued, for their holes being covered with leaves they cannot very easily find them; they run backward and forward as though they had lost their way, and seem to know where their house is, but cannot find the door by which to enter it.

"They build, or rather excavate their dwellings with much art and nicety, working them into long galleries, with branches on each side; each branch terminating in an enlarged apartment, in which they store their winter provisions. Their acorns are lodged in one; in a second is maize or Indian corn; in a third, hickory nuts; in a fourth, chesnuts, wheat, hazel-nuts, butter-nuts, or the kernels of the pine-trees. They will even dig through into cellars, carry off the stores of apples, pears, and other winter fruits, laid up by the natives. They are provided with a natural sort of pouch in each cheek, which enables them to carry off their booty with great ease.

"The fur of the white and grey squirrels is a valuable article of commerce with all the northern countries where they abound, particularly in Russia and Siberia, where there are vast numbers of these little creatures in the pine-woods."

CHAPTER V.

My dormice, for I have had three of these little animals in my possession, were caught in the hazel-groves of Upham, near Bishop's Waltham, in Hampshire, and were brought from thence, a distance of one hundred and seventy miles, fast asleep in a basket of hazel-nuts.

Dormy was a pretty lively little creature, about the size of a large common grey mouse, only rather plumper and rounder; his coat was very soft and thick, of a bright hazel tint, and he had great black eyes as bright as diamonds; his tail was as long as the rest of his body, and furnished at the end with a fine brush, after the manner of a squirrel's.

When I first saw him he was fast asleep, rolled up like a ball of soft squirrel-coloured fur; his feet were curiously folded under him, his black eyes were shut, and his tail curled over his head and resting on his back. I thought my pet the most innocent creature, and withal the prettiest I had ever seen. My friend, who gave him to me, very kindly provided a cage for the accommodation of my dormouse. This cage was something after the manner of a birdcage, only lower, and the roof, instead of being at all conical, was bent over in the form of a low arch. There was a sleeping berth attached to the outer part of the cage, communicating with it by means of a little door just wide enough to admit Dormy to whisk in and out at will; this sleeping berth was furnished with a door, or rather a lid, in which was fixed a small plate of glass, which afforded me an opportunity of peeping in on my little

prisoner, and observing his movements. This sleeping room was lined with soft hay and moss, which bedding it seemed to prefer to cotton or wool. There was a false bottom to the outer apartment, which drew out when I wished to have him cleaned, and a wire door to supply him with his proper food.

For some weeks my dormouse continued very wild, and would not allow me to see him eat. If I opened his door to look at him, he stole a sly glance at me, and immediately concealed himself beneath his covering of moss, peeping up now and then with his bright black eye, as you have seen a frightened baby hide its face on its mother's shoulder when noticed by strangers, and then court attention by its wily tricks.

I observed that my dormouse, like the generality of wild animals, was far more lively as the night approached; he would skip and scamper about his cage, swing himself on his little wire pole, run along the wires, shake every one, and then fall to gnawing the frame-work of his cage, with the view of effecting his liberty. During the day he generally remained quite snug, and dosed away his time; sometimes, indeed, he would steal out, get a nut, and hasten with it to his bed-room, where he amused himself by cracking the shell and eating the meat. The night was however his time for eating, and for frolic and fun. Dormy never attempted to bite even in his wildest state, though he watched every opportunity for endeavouring to make his escape. He was so nimble, and at the same time so subtle, that I was obliged to be constantly upon my guard when I took him out of his cage to look at his bright eyes, or coax his soft warm fur, lest he should run away. One day he ran up a gentleman's

sleeve, and he was obliged to remove his coat before the truant could be restored to his nest.

The love of liberty was very strong in this little animal, and many were the attempts he made to get away from his cage, and he certainly would have effected his purpose, had not sleep overtaken him. This sly creature had found a method of unfastening the outer door of his cage, in spite of all my vigilance. One day, after a search of several hours, I found him clinging to the iron rod of the window-curtain, with his tail twisted round it, and in this situation he was sound asleep. But the worst misfortune that ever happened to my poor mouse was one of a very serious nature, and which had nearly proved fatal to him; but it is necessary to premise my story by informing you that my friend, when he gave me my mouse, told me not to give it any water, as the moisture contained in a portion of apple or pear was quite sufficient to satisfy his thirst. Now he was mistaken, as experience afterwards proved. Experience teaches us many useful lessons, though sometimes at a considerable cost, and this time it nearly cost me the life of my poor little mouse.

I generally carried his cage up stairs into my dressing-room of a night, for fear of the intrusion of cats into the parlour; by some accident the door of the cage had not been properly secured, for in the morning, when the servant entered my chamber as usual, and went into the dressing-room, she discovered my poor dormouse in the most woful plight imaginable—sitting up to his chin in some water that had been left in the hand-basin. His fur was soaked with wet; his poor limbs shivered as if under the influence of an ague fit;

and he was looking the picture of misery. He had been induced by thirst to venture into the basin where the water was, and the sides being cold and slippery, he had fallen in: had there been more water, he must have been drowned. We took the poor thing out of his unseasonable cold bath, wiped his wet fur, and placed him in his sleeping berth. For some days I thought he would have died; all the fur came off his back and the lower parts of his body, leaving him quite bare, with a skin as white as snow. During this time he slept, and never ventured out into his cage. I used to supply him with nuts, and white bread just moistened with milk, apples, and now and then a bit of sugar.

In about a fortnight's time, his white skin began to assume a dusky hue, and by degrees his fur came again as thick as ever; but he looked a very droll fellow for some time, his coat being party-coloured.

This frolic somewhat tamed my gentleman's wildness, and he became more docile than he had been before his accident. He would come to the side of the cage, take from my fingers a morsel of biscuit or a nut, but he always contrived to look as if he had stolen it, hurrying away to a distant corner of the cage, and casting a frightened look at me over his shoulder.

From this time I never failed to supply him with fresh water every day; and it was very amusing to see the pretty creature come and drink, and after he had quenched his thirst, proceed to wash himself. Dormy first wetted his paws and his tail in his little saucer, and then rubbed them over his head and back.

Naturalists have affirmed that these animals do not lap as other quadrupeds do, but drink out of the hol-

low of the hand ; in this point, however, I think they are mistaken: my dormice never drank in any other way than lapping with the tongue. They likewise say the dormouse jumps and leaps, but never runs : now my dormice would run with great swiftness, rather depressing the body, and raising the tail in a slight degree from the ground, but I never saw them either leap or jump. Most expert climbers they certainly were, laying hold of the wires of their cage with their paws and tails, and with these helps they would ascend any place however perpendicular; the legs of the tables, the sideboards, the bookcase, the curtains, they would climb: their agility was most surprising.

One morning I found the glass displaced from the lid of his inner chamber, and the dormitory empty; the cunning little fellow had gnawed the edge of the wood-work round, till he had contrived to loosen the glass, and had made his escape through the aperture. For two whole days I sought for the good-for-nothing little runaway in vain, and at last was obliged to relinquish all hope of ever regaining him, supposing he had fallen a prey to a cat, or had joined himself to a colony of grey mice that lived in a hole beneath the door-mat. But hope is sometimes realized when hope has fled. The third day after the disappearance of my little bright-eyed favourite, he was unexpectedly discovered rolled up in a bundle of fine muslin and net, at the bottom of the sideboard drawer, fast asleep, and perfectly unconscious of the mischief he had done, having gnawed some valuable articles of fine work belonging to my sister into mere shreds. I suppose by some accident he had found the drawer open, and seeing a comfortable assortment of soft materials, had whisked

in and selected the drawer as a bed-chamber for his own convenience, in preference to his cage. For my part, I was quite ashamed of the bad behaviour of my pet, and was obliged to make many apologies in his behalf.

Nothing seemed to please Dormy better than hanging up a bit of rag in his cage; it afforded him amusement and employment for hours; part of it he would divide with his sharp teeth into fragments and convey to his nest, reserving a considerable portion to wrap himself in by way of quilt; and he would roll this about him till you could hardly get a peep even at his sly black eyes. I always had his cage cleaned every morning, and fresh sand strewed at the bottom. Sometimes I used to bring home a piece of stick or dry wood covered with moss, which I placed in his outer house; this he would pick off, and convey in little parcels in his mouth to increase the warmth of his bed. If I gave him a little bunch of new hay, he bit it into small pieces till he had made it fine enough to please him. He was very careful never to make a dirt in his sleeping-room; indeed he was a very cleanly little fellow.

I used to be much entertained by watching this creature when eating: he would choose a nut, holding it in his fore paws, and begin to make a hole in the shell, which he effected by means of his front teeth; turning the nut round and round in his little hands as you would pare an apple: when he had made the hole sufficiently large, he began to eat the kernel. I have often examined these empty shells, and been surprised how the meat could have been so completely extracted through so small an orifice; but nature has furnished

the animal with tools proper for the work, its long teeth and sharp claws render that easy to him, which to other animals would be impracticable.

I kept my dormouse for nearly three years, at the end of which time it died, after declining two or three days. I did not like to give its body to the cats, so buried it under the mulberry-tree, which had formerly been the grave of our pet hare Browny.

The ensuing winter a young friend of mine presented me with two fine, fat, tame dormice, in an elegant mahogany cage, with gilt wires.

These dormice had been kept in a state of confinement for some time, and were exceedingly sociable, permitting me to take them from their cage as often as I liked. They would lick my fingers most affectionately, stand up on their hind legs, and beg for sugar or cake, and often diverted me by their amusing tricks. They would climb up a stout piece of string as a sailor would a rope, and jump at a nut or piece of bread tied to a string and suspended from the top of their cage, and never bit or scratched our hands, though they were not always quite so gentle to each other; for Soft-back, which was the larger and stronger mouse, would often huff poor Bright-eyes into a corner, and even bite his nice ears and tail, and pull his long black whiskers, and make him squeak.

These dormice possessed the same love of nibbling rags as my old pet had evinced. One day I had thrown my lace bonnet-cap on the table near the mouse-cage, and when I went to remove it some time afterwards, to my great vexation I found it partly drawn through the wires, and entirely destroyed. Those mischievous little creatures, to increase the

softness of their bed, had gnawed the caul of my cap. I had only my own carelessness to thank for what had been done; but the circumstance taught me not to leave lace caps within reach of dormice for the time to come.

The end of poor Soft-back was a doleful one; he contrived one night to escape through the wires of his cage, and was found the next morning drowned in a jug of water that had been left on the side-board. Bright-eyes did not survive his companion many weeks, and died, as I suppose, of old age, his teeth being nearly worn out.

We used to feed our dormice with nuts, walnuts, beech-nuts (which latter may be found in the autumn under the beech-trees, just when the leaves begin to fall,) acorns, chestnuts, wheat, bread, apples, and almost any kind of fruit; sugar and cakes they are fond of: I sometimes gave them a pinch of oatmeal. I never offered them any kinds of vegetables; but I am told they will eat peas, carrots, and many other kinds of pulse and roots in their wild state.

One anecdote of a field-mouse was of so singular a nature, that had I not been an eye-witness of the fact, I should have felt some incredulity as to its truth.

Papa was in the rick-yard superintending the labourers, who were employed in the removal of a stack of wheat into the barn, when mamma sent Susan and me to carry a book, which he had requested to be sent to him. Now I must tell you, the stack was full of rats and mice, and the rat-catcher had been summoned to attend with all his dogs, that these destructive animals might not be allowed to escape; and very few, I fancy, were so fortunate as to elude the vigilance

of the men on the stack and the dogs below. One little mouse, however, did contrive to save his life and obtain his liberty, by a stratagem so bold as to fill all the beholders with surprise and admiration. Being closely pursued on the stack, the creature ventured to leap to the ground, but on gaining it, found himself so close to one of the dogs, that escape from his jaws seemed next to an impossibility; but it so chanced that the dog did not perceive his poor little victim: instead of seeking safety in flight, the mouse no sooner found her perilous situation, than she ran up the fore leg of the great cart-horse Captain, to which she clung in a state of tremulous alarm. The dog, though within half a yard of her, had not noticed her singular retreat. Papa's quick eye had detected the fugitive's extraordinary movements, and he silently pointed to the mouse, the horse, and the dog. Perhaps the conduct of the horse was as remarkable as that of the mouse. The generous animal was not unconscious of what had taken place; and he did not abuse the confidence that had been placed in him: he cast his large eye down on the little trembling fugitive with an air of benevolence; had he winced, or kicked, or stamped his foot, the poor little beast must have quitted her hold and been discovered, but he stood perfectly still.

There was a pause of almost breathless interest—suddenly some distant prey caught the eye of the dog, and he flew to seize it; the mouse seeing the coast clear, descended from her hiding-place, without heeding papa, or Susan, or me, and darted away to the neighbouring wood-stack. It would seem as if instinct had taught her that the dog was her natural enemy, and not the horse. The conduct of the latter

partook of the generosity of a nobler nature than is usually characteristic of the brute creation.

I noticed a singular instance of caution in a little mouse that had stolen out of the ivy-hedge in the garden one summer's evening, to catch some of those moths called honey-suckers, which may be seen in the twilight humming over the bosoms of those flowers that have not closed their petals with the departure of the sun. Surprised at the novelty of seeing a mouse chasing a moth, I stood still to observe its proceeding. Whilst I was amusing myself with watching its dexterous movements, suddenly our black cat Juba, with a great fat kitten trotting by her side, came suddenly upon us, within a few paces of the mouse; retreat was impossible, but caution effected what speed could not have done: instead of running away, the mouse stood motionless beside a clod of earth, which nearly resembled her own dun-coloured coat. So perfectly still was the attitude of the little animal, that you would have thought it impossible for any living, breathing creature to have remained so quiet. The cat had not noticed the mouse, and she passed within a few feet of the spot on which the little creature was standing; the kitten, too, full of fun and glee, was attracted by the rolling of a stone which its mother had set in motion with her long tail, and thus, as if by miracle, did my little friend escape a double chance of destruction.

We should have termed sagacity of this kind in man, presence of mind, but in the mouse it was an exercise of instinct, which leads animals to seize every possible expedient that offers for ensuring their self-preservation.

In the character of the common mouse, there is a mixture of boldness and timidity scarcely compatible with each other. An instance of the former conduct occurred in our kitchen one day. Whilst the servants were eating their dinner, a large grey mouse ran up the sable-cloth, and seizing a piece of bread, began eating it as if it had been an invited guest. The cook caught the mouse by the tail and held it fast, and in this situation it continued to eat the bread with as much unconcern as if it had been at liberty.

The novelty of the mouse's behaviour induced the housemaid to summon us to witness it, and accordingly we came into the kitchen and beheld the bold little visitor eating from the plate of the cook, perfectly unconcerned by the gazing looks of the assembled spectators. The servants would have killed the animal, but we interceded with mamma for its life. It would have seemed most barbarous to have put to death a little creature who had thus shared our hospitality with such unusual display of confidence. I can only refer this singular conduct in the mouse to excess of hunger, which for a time overcame the natural fearfulness of its nature.

My brother Tom once made a collection of no less than eight-and-twenty white mice, which were all taken in a wheat-stack. There were large white mice with red eyes, and middled-sized, half-grown ones, and little mice just able to feed themselves. We remonstrated with Tom on the folly of encouraging such a number of mischievous animals, but Tom said he should give some away to his schoolfellows who would be thankful for such an offering as white mice with red eyes, and the rest he should keep in a box, and feed, and make them tame.

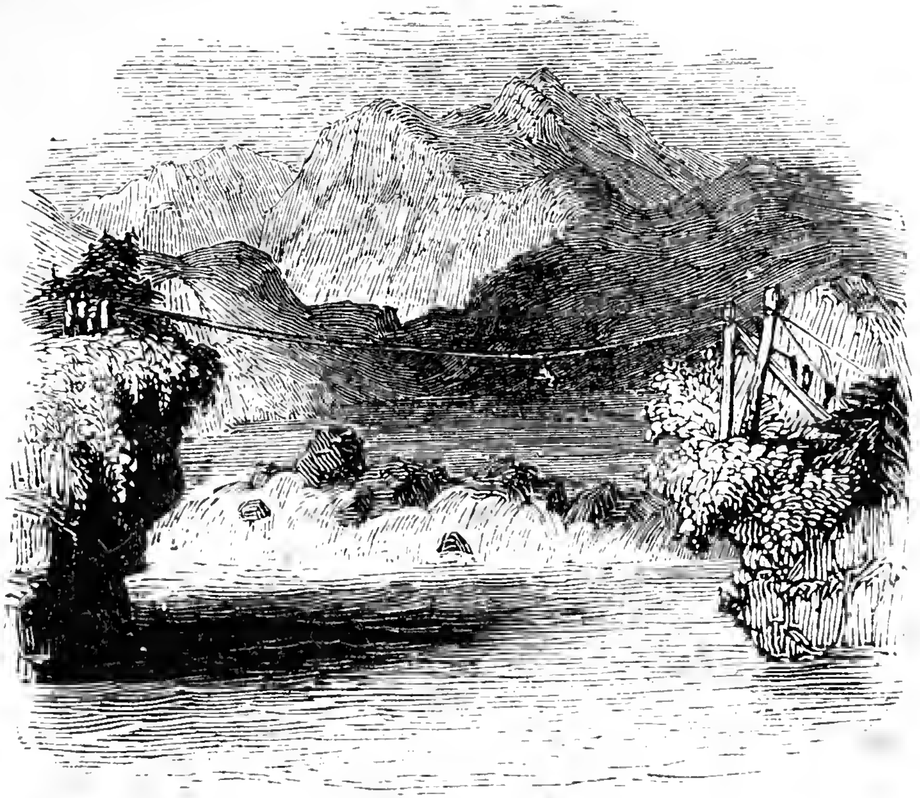
Not many hours after this, curiosity tempted one of the servants to look into the box, when with one accord these nimble little gentry scampered up the side and leaped out one after another, till not *one* was left to console its master for the loss of the other seven-and-twenty. Some whisked into one hole, some into another; one party ran under the clock, another under the copper-hole, a third into the pantry, a fourth into the court-yard; and the house has been swarmed with these mischievous animals ever since, in spite of the increase of our cat establishment.

The nest of the harvest-mouse is of very curious construction: it is made entirely of the blades of the wheat and a few fibrous roots platted together in a spherical form, and suspended among the stalks of the thistles that grow on the banks and headlands of the corn-fields. There is a tiny opening at the side, by which the little animal obtains entrance to its nest. This hanging cradle generally contains from six to eight young ones, and it seems marvellous how so small a space can accommodate so large a family; but doubtless, of all others, it is the one best adapted to the purpose, or it would not have been thus constructed; for there is no want of wisdom in any of the plans of the Great Designer, or deficiency of execution in the work of the little artificers. It is remarkable that it is only its nursery that is so constructed. In the autumn and winter the harvest-mouse digs a subterranean dwelling for itself in the earth. The harvest mouse is one of the smallest of our British quadrupeds: from the nose to the tail they are only two inches and a quarter; the tails are as long as the rest of the body: the colour of this animal is somewhat like that of the dormouse.

CHAPTER VI.

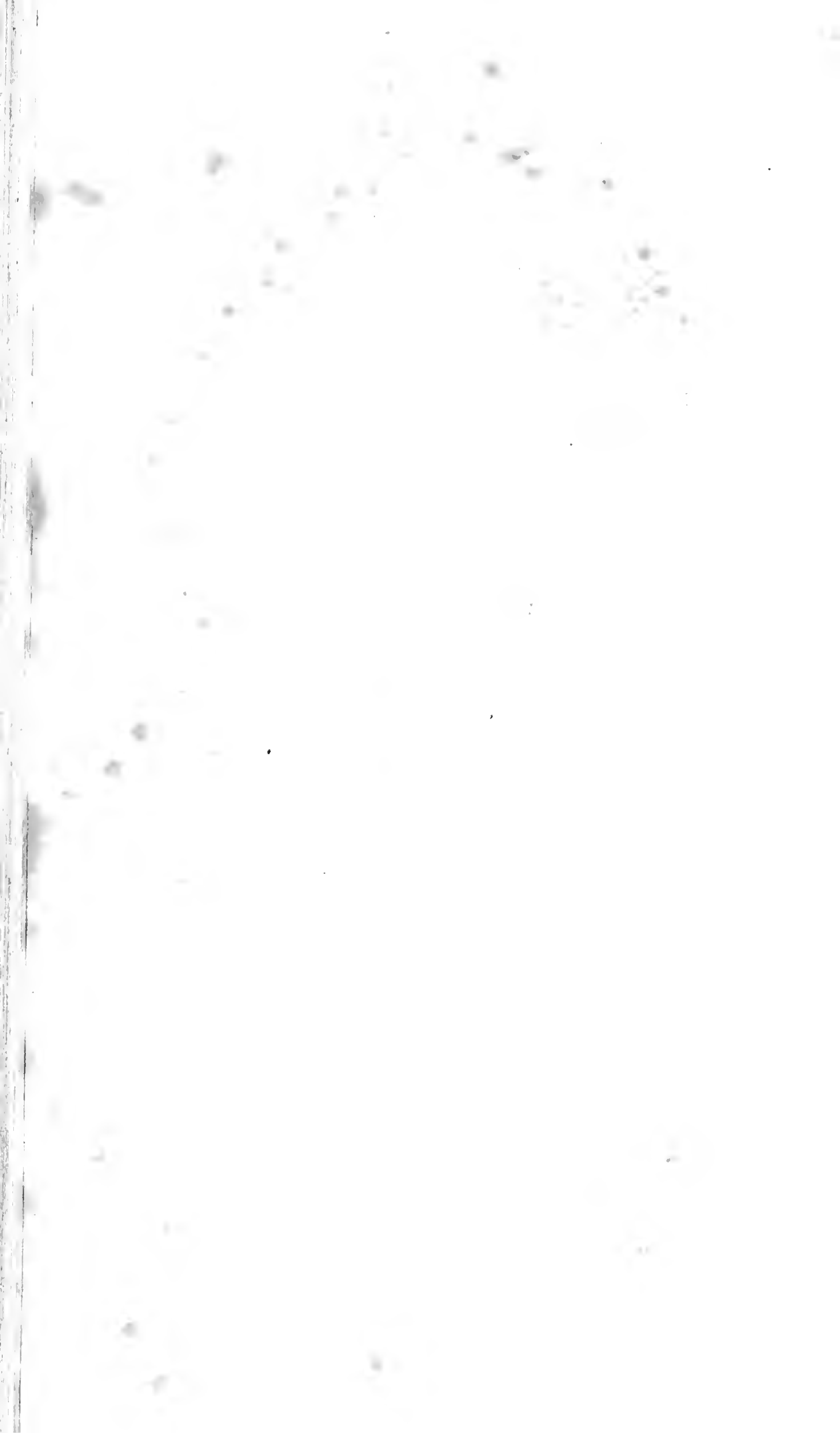
Rope Bridges.

A bridge is a mode of conveyance from one part of space to another, the intermediate part being either impassable, of difficult, or otherwise of an inconvenient access. The strength must be in proportion to the weight which is to be supported; the extent or length of the passage being likewise taken into consideration. The passage may be of considerable distance, and the weight to be supported, inconsiderable; for example, a spider is the greatest weight to be supported,—and it can spin as much matter from its bowels as will answer its purpose, and can find supports upon which it can make the extremities of its bridge to rest. But not to take up time to mention the ingenuity, or under whatever name it may be designated, of insects, birds, or quadrupeds, that discover admirable instances of art suitable to their nature, and uses fitted for their situation, my chief intention is to investigate the exertions of the rational part of the creation, and their mode of accommodating themselves to their necessary exigencies. The construction of perfect bridges, being a complex operation, cannot have taken place amongst a rude and uninformed people. The most obvious and simple bridge is that formed by single trees thrown across smaller streams, or in case of broader streams, by fastening the roots of a tree on each bank, and by twisting together their branches in the middle of the stream. These must have frequently occurred by chance, and they fall within the comprehension of the hunter.



Indian Rope Bridge.

Great Bell of Moscow.



The next step is not much more complex, for in a space too great for the before-mentioned operations, few manual arts were required to form ropes of rushes or leathern thongs, to stretch as many of them as were necessary between trees or posts on the opposite banks, and cover them over so as to form a slight bridge.

Over the river Desaguadero is still remaining the bridge of rushes invented by Capac Vupanqui, the fifth Inca, for transporting his army to the other side, in order to conquer the provinces of Collasuyo.

The Desaguadero is here between eighty and a hundred yards in breadth, flowing with a very impetuous current, under a smooth, and as it were, sleeping surface.

The Inca, to overcome this difficulty, ordered four very large cables to be made of a kind of grass which covers the lofty mountains of that country, and called by the Indians, Icher, and these cables were the foundation of the whole structure. Two of these being laid across the water, fascines of dry juncia and toxtord species of rushes were fastened together and laid across them. On these the two other cables were laid, and again covered with other fascines, securely fastened, but smaller than the first, and arranged in such a manner as to form a level surface; and by this means he procured a safe passage to his army.

This bridge, which is about five yards in breadth, and one and a half above the surface of the water, is carefully repaired or rebuilt every six months, by the neighbouring provinces, in pursuance of a law made by that Inca, and since often confirmed by the kings of Spain, on account of its prodigious use, it being the

channel of intercourse between those provinces separated by the Desaguadero.

There are two other kinds of bridges in use in South America, besides those made of stone, which are very few: the former of wood, which are most common, and the latter of bujucca, which come under our description. These are used where the breadth of the river will not admit of any beams to be laid across. In the construction of these, several bujuccas are twisted together so as to form a kind of large cable of the length required. Six of these are carried from one side of the river to the other, two of which are considerably higher than the other four. On the latter are laid sticks in a transverse direction, and over these branches of trees as a flooring; the former are fastened to the four which form the bridge, and by that means serve as rails for the security of the passenger, who would otherwise be in no small danger from the continual oscillation. The bujucca bridges in this country are only for men, the mules swim over the rivers; in order to do which, when their loading is taken off, they are driven into the water near half a league above the bridge, that they may reach the opposite shore near it, the rapidity of the stream carrying them to a great distance. In the mean time the Indians carry over the loading on their shoulders. On some rivers of Peru there are bujucca bridges so large that droves of loaded mules pass over them: particularly over the river Apurimac, which is the thoroughfare of all the commerce carried on between Lima, Cusco, La Plata, and other parts to the southward.

Some rivers, instead of a bujucca bridge, are pas-

sed by means of a *tarabita*, as is the case with regard to that of Alchipichi. This machine not only serves to carry over persons and loads, but also the beasts themselves: the rapidity of the stream, and the monstrous stones continually rolling along it, render it impracticable for them to swim over.

The *tarabita* is only a single rope made of bujucca, or thongs of an ox's hide, and consisting of several strands, of about six or eight inches in thickness. This rope is extended from one side of the river to the other, and fastened on each bank to strong posts. On one side is a kind of wheel or winch, to straighten or slacken the tarabita to the degree required. From the tarabita hangs a kind of leather hammock, capable of holding a man, and suspended by a clue at each end. A rope is also fastened to either clue, and extended to each side of the river, for drawing the hammock to the side intended. A push at its first setting off, sends it quickly to the other side.

For carrying over the mules two *taribitas* are necessary, one for each side of the river, and the ropes are much thicker and slacker. On this rope is only one clue, which is of wood, and by which the beast is suspended, being secured with girths round the belly, neck, and legs. When this is performed, the creature is shoved off, and immediately landed on the opposite side. Such as are accustomed to be carried over in this manner never make the least motion, and even come of themselves to have the girths fastened round them; but it is with great difficulty they are at first brought to suffer the girths to be put round their bodies, and when they find themselves suspended, kick, and fling during their short passage in a most

terrible manner. The river of Alchipichi, may well excite terror in a young traveller, being between thirty and forty fathoms from shore to shore; and its perpendicular height above the surface of the water, twenty-five fathoms.

At Rampore also, over the Sutlej, is a bridge of ropes called the Jhoola, described by Mr. Frazer, and according to his account measures three hundred feet between the points of suspension.—"At some convenient spot where the river is rather narrow, and the rocks overhang the stream, a stout beam of wood is fixed horizontally upon or behind two strong stakes, that are driven into the banks on each side of the water; and round these beams ropes are strained extending from one to the other across the river, and they are hauled tight and kept in their place by a sort of windlass. The rope used in forming this bridge is generally from two to three inches in circumference, and at least nine or ten times crossed to make it secure. This collection of ropes is traversed by a block of wood hollowed into a semicircular groove, large enough to slide easily along it, and around this block ropes are suspended, forming a loop, in which the passengers seat themselves, clasping its upper parts with their hands to keep themselves steady; a line fixed to the wooden block at each end and extending to each bank, serves to haul it from one side of the river to the other.

The river rushes beneath in awful grandeur, and the ropes, though they decline in the centre to the water, are elevated from thirty to forty feet above it. The span is ninety to a hundred yards. It could not have been without some uncomfortable feelings that

our traveller must have launched in such a machine to cross the Sutlej.

Off Bressey is the most remarkable of the rock phenomena of Shetland, the Noss, a small high island, with a flat summit, girt on all sides by perpendicular walls of rocks. The communication with the coast of Bressey itself is maintained by strong ropes stretched across, along which a cradle is run, in which the passenger is seated. Thus it may be observed we have some shew of its use even in our own country, evincing from these descriptions of South America and the East Indies, that the invention of pendant bridges is very apparent, and their use of great antiquity in mountainous districts.

The Great Bell at Moscow.

The city of Moscow was formerly distinguished as the metropolis of the Russian empire. It was founded as early as the year 1154, but it was not until Daniel, the son of Alexander Neuski, made it his residence as Duke of Muscovy, that it attained a position which we may consider was the foundation of its future greatness; and in 1304, it was fixed as the capital of the Russian dominions. It is situated in the midst of a fertile plain, watered by the river Mosqua, which flows round the greater part of the city. It is twenty-six miles in circumference, and contains above three hundred thousand inhabitants; its appearance from a distance is singularly splendid, presenting a numerous assemblage of spires glittering with gold, amidst burnished domes and painted palaces.

There is no outer wall around the city, but only a

simple parapet of earth. Dr. Clarke says, "one would imagine that all the states of Europe and Asia had sent a building by way of representative to Moscow, and under this impression the eye is presented with deputies from all countries holding congress; lumber huts from regions beyond the arctic; plastered palaces from Sweden and Denmark, not white-washed since their arrival; painted walls from the Tyrol; mosques from Constantinople; Tartar temples from Bucharia; pagodas, pavilions, and verandahs from China; cabarets from Spain: dungeons, prisons, and public offices from France; architectural ruins from Rome; terraces and trellises from Naples, and warehouses from Wapping." Such is Dr. Clarke's humorous description. Another traveller says, "that some parts of this vast city have the look of a sequestered desert, other quarters of a populous town, some of a contemptible village, others of a great capital. It looks exactly as if three or four hundred great old chateaus had come to life together, each bringing along with it its own little attendant village of thatched cottages."

The city contains five distinct divisions or towns, each encircled by its own wall. It has numerous churches and chapels, over the doors of which is the portrait of the saint to whom it is dedicated; to this the common people pay their homage as they pass along by taking off their hats, crossing themselves and occasionally touching the ground with their heads; a ceremony we are informed they repeat nine or ten times in succession. The most remarkable ecclesiastical edifice as affording a striking monument of national manners, is the church of St. Basil, which is a complete specimen of the Tartar taste in building. It was erected by Ivan

Basilovich the second, in 1538. And to add to the singularity of its history, it was the workmanship of Italian architects. Its numerous and heavy cupolas, surmounted by gilded crucifixes, exhibit a striking contrast of colour and ornament. Pious individuals have left legacies towards the perpetual gilding or embellishment of a particular dome, according to their fancies, so that it remains a splendid piece of patchwork for many generations.

The Kremlin is however above all other places most deserving a traveller's notice. This fortress is surrounded on all sides by walls, towers, and a rampart, and filled full of domes and steeples. Entering it by the arched portal called the Holy Gate, persons of every description are compelled to walk bareheaded near a hundred paces. A writer says, that in passing under this gate all hats are taken off in reverence for a saint suspended over it, who delivered the citadel, as tradition affirms, by striking a sudden panic into an army of Poles that had possession of the town, and had almost succeeded in forcing this gate. The Kremlin is of a triangular form, and about two miles in circumference; it contains the citadel, many churches and magnificent houses, the palace of Czars, a building in the Hindoo style above two hundred years old, and one of the most gorgeous pieces of architecture contained in the city.

Among its wonders is the great gun, about eighteen and a half feet in length; it will admit of a man sitting upright within its calibre, and is ten inches thick. It is kept merely for show and ostentation, and is never used; it remains in good order, without injury: it was cast in 1694. But in the midst of the Kremlin,

in a deep pit where it was originally cast, is the great bell of Moscow, the largest that was ever founded. We shall quote entire Dr. Clarke's account, as being one of the best and most accurate. The history of its fall the Doctor considers a mere fable—"it never was suspended, the Russians might as well attempt to suspend a first-rate line of battle-ship with all its guns and stores. A fire took place in the Kremlin, the flames of which reached the building erected over the pit in which the bell yet remained; in consequence of which the metal became hot, and water thrown to extinguish the fire, fell upon the bell, causing the fracture which has taken place. The descent to the cave is by means of a double flight of steps reaching from the bottom of the cave to the roof. The entrance is by a high trap-door placed even with the surface of the earth. The steps were very dangerous, some of them were wanting, and others broken. The bell is truly a mountain of metal; they relate that it contains a very large proportion of gold and silver; for, that while it was in fusion the nobles of the people cast in as votive offerings their plate and money. It is permitted to doubt the truth of traditionary tales particularly in Russia, where the people are much disposed to relate what they have heard, without once reflecting on its probability. The natives regard it with superstitious veneration, and they would not allow even a grain to be filed off. At the same time it may be said, the compound has a white shining appearance unlike bell-metal in general, and perhaps its silvery aspect has strengthened, if not given rise to a conjecture respecting the richness of its materials."

On festival days, the peasants visit the bell as they

would a church, considering it an act of devotion, and they cross themselves as they descend and ascend the steps. Half a dozen Russian officers assisted Dr. Clarke in the admeasurement, which was attended with some difficulty, as being partly buried in the earth. There were about ten persons present when Dr. Clarke measured those parts that were exposed to observation. We applied, he continues, a strong cord close to the metal in all parts of its periphery, and round the lower part where it touched the ground, taking care at the same time not to stretch the cord. From the piece of the bell broken off it was ascertained that we had thus measured within two feet of its lower extremity. The circumference obtained was sixty-seven feet and four inches, which allows a diameter of twenty-two feet five inches and one-third of an inch.

We then took the perpendicular height from the top of the bell, and found it twenty-one feet four inches and a half. In the stoutest part, that in which it should have received the blow of the hammer, its thickness equalled twenty-three inches. We were able to ascertain this by placing our hands under water where the fracture had taken place, which is above seven feet high from the lip of the bell. The weight of this enormous mass of metal has been calculated to be 443,772 lbs., which if valued at three shillings a pound, amounts to 66,565*l*. 16*s*. lying unemployed and of no use to any one.

It was cast in 1653, in the reign of the Empress Anne, and the female figure represented on it is said to be intended for her, but the greater probability is that it was meant for the Holy Virgin.

The bells in the different churches throughout Moscow are very numerous, and are amongst the most remarkable objects connected with that city; they are hung in belfries detached from the church, and are rung by a rope tied to the clapper; they yield the most solemn sounds. One of them in the belfry of St. Juan, is above forty-five feet in circumference, and more than fifty-seven tons in weight. "When it sounds," says Dr. Clarke, "a deep and hollow murmur vibrates all over Moscow, like the fullest and lowest tones of a vast organ, or the rolling of distant thunder.

CHAPTER VII.

I SCARCELY know a prettier sight than a hilly pasture covered thickly over with sheep and lambs, on a fine spring day, when the sun is shining brightly in the clear blue sky; the edges white with the opening blossoms of the hawthorn and wild rose; the air loaded with the perfume of a thousand fragrant flowers, that enamel the banks and meadows; and the ear enchanted with the melody of the blackbird, the mellow thrush, the grey linnet, the goldfinch, and the low but sweet-noted hedge-sparaow; while the cuckoo's voice is heard calling as she flies through the distant copse, and the low cheerful warbling of the lark, as she sings and soars, and soars and sings, greets the ear and mingles with the general chorus of sweet sounds; and with the lowing of the cattle in the distant pastures, the bleating of the young lambs, and the gay whistle of the idle shepherd's boy, whose

prying eyes pierce every bush and thickly-woven bough, as he steals with cautious step along the hedgerows in search of birds' nests.

And then to rest upon some shaded stile, and watch the flock issuing from the pastures on their way to some distant inclosure, pouring along the green hill side into the lane below, resembling in motion the course of a rapidly-flowing stream; the whole of this moving multitude guided by the shepherd, and the careful dog which keeps the flock from breaking bounds, restraining those that would go astray, and urging the tardy lingerers onward.

In our rambles among the fields and heathy lanes that skirt our land, we used frequently to meet the shepherd of a neighbouring farmer's flock, and his dog Snow. By degrees a sort of intimacy became established between Snow and us. He was the most affectionate, the most faithful, and withal the most comely of his race. I wish you could have seen him, or that I could give you a perfect picture of this amiable animal. In size he did not exceed that of a large spaniel; his coat was white, and shone like new-fallen snow on a bright wintry day; the hair though not exactly curling, hung in large wavy flakes; he had a flourishing tail, like a great white feather; his eyes were large, black, and expressive: his whole physiognomy was indicative of benevolence and honesty, and inspired a degree of confidence in the beholders.

The shepherd seemed highly gratified by the attention we bestowed on Snow, and ventured to express a hope that the young ladies would sometimes walk through the meadows while the flock remained there,

and look at his sheep, and see how well Snow managed to keep them in order. This we gladly promised to do, for the meadows were our favourite walk, and we liked the shepherd, and his white lambs, and his dog Snow.

It was on such a lovely spring morning as that I have already described, that we went to visit Snow and his master. We found the shepherd reposing on a green turfy slope, arrayed in a long white gown, tastefully embroidered on the shoulders, and falling in full folds to his ancles; his large flapped straw-hat, the work of his leisure hours, lay on the grass beside him; his crook, which was a long white staff with an iron hook at the end, rested against his shoulder; and in his hand was a small hymn-book, on which his eye was fixed with an expression of mild seriousness. The sheep were scattered over the pasture, quietly feeding; and Snow, his beloved, faithful dog, was reposing at his feet. Altogether, I think, they would all have formed a pleasing subject for an artist's pencil: they looked so cheerful, so peaceful, and so contented.

Snow greeted our approach with a joyful bark, and bounded towards us with every appearance of gladness. I could not help thinking his master felt a little jealous of the attention he bestowed on us, for he observed, as he clasped the brass studs of his hymn-book, "You must not set much store by Snow's caresses, ladies; for, I must tell you, he is a proper *cant;*" and he patted his white favourite's back, and looked upon him with tender reproach as he spoke, as though he would have chidden him for bestowing those marks of his affection on strangers, that of right belonged only to himself.

"I have had this dog several years, ladies," he observed, "and as you seem to have taken a fancy to him, may be you will like to hear how I came by him."

We had no objection to listening to the shepherd's story, and he then began.

"I was a lad of about sixteen years old, or thereabouts, when I first met with Snow. At that time I lived with my father, in a cottage in the Woodlands of Suffolk, up by Glemham and Bruisyard; and a pretty part it is, as any in the county, to my mind. I used to keep cows and hogs when a little boy, and afterwards my master gave me the care of sheep and lambs, because I was so kind to dumb creatures; and proud enough I was of my flock. It was my place to see after them the first thing in the morning and the last thing at night, and many a time have I got out of my warm bed to go down to the fold to count over my lambs, and see if all were safe. Of a winter's morning I used to be up by four o'clock to look after them, and never cared for wind or rain or snow; for if I was cold, I knew I could creep under the hay-rack, or lay me down among the sheep, and they would keep me as warm as a blanket, and warmer too, pretty dears; or if hungry, I could help myself to a sup of the ewe's milk, and the lambs be none the worse for what I took.

"Our cottage stood on one side of Bruisyard wood, and my master's farm lay on the other side of it, so that when I had an occasion to go to the fold I was obliged to pass directly through the wood; now I was rather timorous when a lad, and when I have heard the owls hooting, and the wind shaking the dead leaves

of the old oaks, I have felt a little queer. If I had had a little brother, or even a dog, to have kept me company, I should not have felt quite so lonely; but I had neither. I used to whistle and sing to myself, or repeat over the pretty hymns that my dear mother had taught me when a little child, and whisper over my prayers, for then I thought nothing would harm me.

" Well, it happened one cold winter's night I was awakened out of my sleep by the distant barking of a dog, in the direction of the fold. I made no stay in bed, but got up directly, put on my clothes, and ran down stairs. The moon was up and shining in the clear blue sky, as bright as the sun at noon-day. Here and there one bright star was glimmering above my head, and the wood-path was all checkered over with the shadows of the tall trees, which flickered and waved as the wind tossed their boughs. I felt a sort of cold chill all over me as I left the lightsome field, and entered into the darker shade of the wood; but there was nothing to fright me, except now and then when some great bird flew screaming and flapping its heavy wings out of the hollow trees, or a poor hare scudded across my path, or the breeze suddenly shivered through the green ivy of some old pollard, making every leaf rattle again. I kept on my way nothing down-hearted, for I knew that neither owls, nor hares, nor a blast of wind could hurt me.

" I had not gone very far when I fancied I heard a moaning sound, and by and by a sort of shriek, that sent every drop of blood back to my heart. I stopped and held my breath for a minute to listen, but I could hear nothing but my own cowardly heart beating as

though it would have burst its way out of my breast. I was then in the very deepest shade of the wood. 'What can that noise be?' I asked myself, and I thought of running home as fast as I could; but I was nearer to the sheepfold and to my master's house than to my father's cottage, so I said, 'Well, I do not care, I will not go back. I have often heard my poor mother say, it is better to face danger than flee from it; beside, God will not suffer any thing evil to befall those whose trust is in him.' So on I went. Just as I came to the spot where two paths met in the wood, I heard a heavy panting, groaning sound, just up the path that led towards the village; I bethought me it might be some poor traveller that had been benighted in the wood or some sick person that was taken ill and could go no further. I ran a few steps along, and then I saw something as white as snow, all shining in the moonlight, that gleamed down among the opening of the boughs. It was very white, and had eyes that shone like candles. I was all over in a tremor at this sight, and turned me round to run away, when I heard a low whining bark, that convinced me that the object that had so terrified me was only some poor dog that had been so unlucky as to fall into one of the traps that poachers sometimes set in the wood to snare game.

"'Well,' thinks I, 'I shall let you abide where you are, and go on to the fold: if I were to come near to take you out of the trap, ten chances to one but that I should get bitten for my good will,' so I went on a little further; but I could not help just turning my head to look back when I reached the turn of the path, and I met the poor thing's eyes looking so pite-

ously at me, that I could not help saying, 'I must let you loose from that cruel trap; it is a hard thing to lie so many hours in misery, and help so near;' so back I went to him, and found the poor beast's leg held fast by the teeth of a rabbit trap. At first I thought the limb was broken, but found though the flesh was sadly wounded the bone was whole. Instead of seeming at all displeased, the dog licked my hand, and just wagged his tail, and looked up in my face, as if to thank me for what I was doing for him. Finding the poor dog could not walk without great pain, I took him up in my arms, and carried him with me to the sheep-fold, where I pulled a little soft hay from the rack, and made a bed for him, and then gave him a little ewe's milk in the wooden cup I always kept in a corner of the rack. I then counted over my sheep and lambs, to see that all were right, and taking Snow, for so I called my dog, in my arms, once more hied me home through the wood-path. I laid him down on the hearth-stone, on an old piece of sacking, and crept up to bed again.

"Snow was so far recovered next morning as to go with me to my flock, and in a few days he was quite well, and became so fond of me that he never would allow me to go any where without him; his eye was on the door in an instant if he saw me take my hat, or rise from my stool in the chimney corner, and he was ready to go as soon as I was.

"As I could not hear of any owner for him, I resolved to keep my dog, and he became quite a treasure to me. I found he had been used to keeping of sheep, for he knew how to manage them better than any shepherd's dog in the neighbourhood.

"I was glad nobody ever came to claim Snow, for I loved him very much, and we have lived together now going on for nine years. He has been my companion wherever I have lived; for when I went to service Snow went with me, and since I have taken to the life of a shepherd, he has shared my home, and drank of my cup, and eaten of my bread, as an old and faithful friend and servant. We have served together many years very happily, and I hope we shall not part now." The shepherd patted the white head of his beloved companion, and his eyes glistened with affectionate tenderness as he stooped to meet the caresses of the grateful animal.

"You never knew, then, to whom Snow belonged before you met with him?" we asked.

"I heard some months after I found the dog," replied the shepherd, "that he had been seen the day before in company with some men who had been visiting the market-towns about our part of the country, with a string of Welch poneys, (*foresters* they call them,) and it is supposed he was lost in the wood the night they left our village; but they never came back to see what had become of the dog, and if I had not heard him barking, and got up to look after my sheep, he would have died in the wood in all likelihood, therefore I consider of right he belonged to the person who saved his life."

We were all much interested in the shepherd's simple story. I could not help thinking he must have been just such a lad as Giles the 'Farmer's Boy;' and the description of his moonlight visit to the fold, reminded me of that passage in the Seasons, where he is described going to assure himself that all his flock are in safety from the intrusion of any strange dog.

We used to pay frequent visits to the meadows to improve our acquaintance with Snow, and to hear his master's account of his sagacity and fidelity.

He told us that one day having occasion to drive his sheep to a farm some miles distant from home, one of the ewes met with an accident that so lamed her that she was unable to proceed with the rest of the flock, and she was far too heavy to be carried, and of course too valuable to be left by the road-side. In this dilemma, the only plan he could devise was to take the flock on, and leave Snow to watch by the sick sheep till his return. This he did, conveying the lame animal to a little hollow dingle by the side of the road, that it might not receive injury from the wheels of any cart or waggon passing that way.

On his return, which was not for some hours afterwards, he said he found Snow, like a faithful sentinel at his post, lying on the ground in front of the pit, with his eye fixed on his helpless charge, and ready with his life to defend it from molestation ; for though usually meek and gentle as a lamb, yet, when his master's property was invaded, he became as fierce and as bold as a lion.

The shepherd did not lead an idle life, sleeping or lounging indolently on the sunny banks when his sheep were at rest, and did not need his immediate attention ; but he used to employ himself in knitting red worsted comforters or mittens, and excellent white lambs'-wool stockings, and white cotton or worsted night-caps. These last he manufactured with a pair of wooden pins, shaped at the end like the half head of an arrow, i. e. with a single instead of a double barb, and capital strong work he made.

Beside these useful articles, he platted and made coarse straw hats, which he sold to the harvest-men at two shillings and sixpence each. The only recreation he allowed himself, was reading his favourite hymns and the Bible, for which book he felt the deepest reverence. "It is a holy and a blessed book," he would often say, "and happy and wise are those who make it their rule and guide through life, and who place themselves beneath the guidance of that great Shepherd of the world's fold, Jesus Christ;" and then he loved to point out those passages that likened people to sheep and lambs; and to tell of David who was taken from the sheepfolds to become the king of Israel, the mighty soldier, and prophet of the Lord. Sometimes, he said, when watching in the fields on a moonlight night, would his thoughts dwell on those happy shepherds to whom the angels revealed the good tidings of salvation, who spoke of peace and good-will towards man—of that blessed time when mercy and truth should meet together, and righteousness and peace dwell upon earth in the Saviour of mankind.

It was a pleasant thing to listen to the simple words of the shepherd, so full of truth and holy meekness; and we were all grieved when the time came for the removal of the flock to a distant farm. We saw neither Snow nor his master from that time till the following spring, when one beautiful May morning, as we were passing by the side of an extensive heath, on our way to a distant town to visit a friend, we were attracted by the appearance of a group of little children, whose laps were filled with harebells, heath, and daisies. They were seated on the grass, weaving a

garland to place round the neck of a white dog that stood in the midst of them. Just as the wreath of wild flowers was being fastened about his neck, Snow, for it was he, broke from his flowery trammels, and bounded towards us with a bark of joy, dragging his gay adornments after him. He held up his nice white paw, as he had been used to do, to shake hands with us, and jumped and frisked about us with every appearance of satisfaction; for he remembered the old friends who used to feed and caress him in the cowslip meadows.

The children seemed surprised at our being so intimately acquainted with their dog. They were the shepherd's little family, and Snow had been their earliest playmate. We left the little group, delighted by the trifling donation of a few pence, to buy cakes for themselves and Snow.

Dogs appear to be animals very sensible of kindness, and frequently evince a degree of gratitude for favours conferred upon them, that puts to shame the coldness and ingratitude which we daily observe in the conduct of human beings.

I could write a volume on the sagacity and the fidelity of dogs, but I must confine my present notices of the canine race to this chapter, in which I shall give a slight account of two or three instances of the attachment of this faithful animal, that have fallen under my immediate knowledge.

While visiting at the house of a particular friend, I was much struck by the strong attachment that was shown at all times by a hound called Music, to little George and Anthony, my friend's two eldest children. Wherever the little boys went, Music followed them;

and even if shut up, she would contrive to make her escape by some means to accompany them in their walks. If the children went to walk in the fields with their mamma or me, Music would go too; if they went to visit their aunt or uncle, or their nurse, Ann Brown, Music was still one of the party; and if the dog loved the children, they were no less attached to her.

This animal had been one of a pack that was kept in the neighbourhood; but it seems, one day after hunting, it accompanied my friend's husband home, where it remained for some time without any particular notice being taken of it, till one morning the poor animal was discovered lying on the threshold of the kitchen door, bleeding in a shocking manner, some cruel person having cut the dog's throat from ear to ear.

Little George was greatly afflicted at seeing the condition of the unfortunate creature; and his papa, being a man of kind and benevolent disposition, had the suffering animal conveyed to the stable, and with his own hands sewed up the wound, binding the neck carefully with a bandage, to prevent its breaking out afresh.

During the time the hound was sick, little George and Anthony used to visit her several times in the course of the day, and feed her with milk mixed with barley-meal, and such food as their papa thought most proper to be given to her.

In a short time they had the satisfaction of seeing the wound quite healed, and the dog was again able to run abroad; but from that moment she never has been induced to leave the house of her benefactors,

and seems truly sensible of the service that was rendered to her, evincing her gratitude by every mark of affectionate attachment to her little friends, to whom she on her part is endeared by the conscious pleasure that springs from having been kind to her when she was at the point of perishing.

One of the rewards of a good action is the happiness it bestows on those that perform it. If children knew how delightful this feeling was, they would lose no opportunity of shewing kindness to their fellow-creatures, and to the brute creation also, for they are a part of the great Creator's works.

There are innumerable instances of persons lives having been saved by the sagacity of the dog. An instance occurred not long since on our coast, where the lives of a whole ship's crew were preserved by the assistance of a noble dog of the Newfoundland breed. This animal was the means of conveying a rope from the sinking vessel to the shore, by which the seamen were enabled to come safely to land; the rope having been first attached to the broken mast of the vessel, and the other end secured to a windlass on the beach.

The attachment of some dogs to their masters has been so strong that death itself has not appeared to lessen their regard, and they have been known to watch with unwearied patience beside the mouldering corpse, and even to die from want, rather than abandon the loved remains.

One of Sir Walter Scott's most beautiful little poems was written on a circumstance that occurred on the borders of Cumberland. A young gentleman left his home in the spring of 1803, accompanied by his little

terrier dog, to pass a few days in sketching on the mountains. After an absence of three months, he was discovered in a lone spot, dead, and his body in a state of decay: his faithful dog was watching beside the body of his master, which he guarded with the most affectionate earnestness.

Dogs are not only capable of the strongest feeling of attachment and friendship for the human race, but also for animals of a species distinct from their own. They often contract a great friendship for horses that they have been brought up with, and even for cats. A friend of mine knew a spaniel that was so greatly attached to a horse, with whom it was accustomed to sleep in the stable during the winter season, that when the horse was turned off to graze on the common during the warmer months, he went every night to seek out his old companion from among the other cattle, and slept beside him on the common, let the weather be wet or dry; these two faithful friends were always found together of a night, the head of the dog nestled beneath the neck of the horse.

Those dogs that love the water are rough and curly coated, with large bushy tails and broad feet, while the wiry-haired dogs generally have so great a dislike to water that they will not enter it without compulsion, not being formed by nature for sustaining themselves for any length of time in that element. But we sometimes have seen instances in which strength of affection has overcome the natural habits and inclinations of these animals; a proof of this love, strong almost as death, was instanced in a little wiry-haired mongrel dog that belonged to one of our servants.

The master of this creature went down to the sea-

side to bathe, accompanied by his dog. During the time he was undressing, the affectionate animal eyed him very anxiously, but on his entering the water, he expressed the greatest possible agitation and distress; howling, whining, and running to the edge of the water, and from thence to the spot where his master's clothes lay, and then again returning to the brink of the waves; at length, regardless of his great aversion to the water, he plunged, and swam as well as he could to the object of his faithful regard, and seizing him by the hair of his head, endeavoured to impel him towards the land, exerting all the strength so feeble a creature possessed, to rescue his beloved master and friend from the danger to which he saw him exposed; and when, to humour his dog, the young man swam to the shore, his joy was no less extravagant in its nature than his grief had been a few minutes previous.

Having given you a few instances of the fidelity of this valuable friend to the human race, I shall close the chapter with a few hints respecting their treatment. But first let me observe, that no person ought to keep a dog who cannot honestly afford to maintain one.

Nothing can be more unkind than to suffer a poor animal to feel the pains of hunger. A certain portion of food is necessary for both dogs and cats, but especially the former. If the dog be kept for use, the master of it can well afford to supply the animal with food in return for its services. The pointer, the setter, the harrier, the terrier, the hound, the greyhound, the rat-catcher, the watch-dog of every description, the dancing-dog, the truffle-hunter, and that trusty and serviceable dog which is seen in the employ of bakers and butchers about town, and which supplies the places of

porters and carriers, these are as much entitled to the provisions they consume, as the horse, the ox, the ass, or any other useful domestic animal, for they contribute towards the welfare of their employer, and as such ought to be taken care of.

Those dogs that are kept merely for amusement, become in reality less valuable according as they are less useful to society, and ought not to be kept. It is a sad thing to see so many of our fellow-creatures perishing in the streets for want of that bread that is daily given to dogs. Before the dainty appetites of animals are pampered, the half-starved children of penury should be relieved.

It is a want of benevolence to waste our sympathy on dogs, while we turn coldly away, insensible to the woful appeal of our suffering fellow-creatures.

I do not mean to infer from these observations that there is any crime in keeping a little dog as a companion and playfellow, if it be not improperly fed. Dogs, like children, may be rendered very dainty by being overfed with food too rich for their stomachs. The lap-dog that is daintily fed with cakes, and fruit, and sweetmeats, will refuse plainer food even if pressed by hunger. Now, such luxuries only render the little creature unhealthy and burdensome to itself, and, therefore, cannot truly contribute to its comfort or happiness.

If a child wish to possess a little dog, I see no objection to its doing so, provided he is resolved to treat the animal kindly, and will see that it is properly fed. Where there is a large family, the bones and refuse scraps will support a dog; but unless some care is taken, even these will be thrown away by wasteful

servants, and the dog will starve amidst plenty: proper orders ought to be given for the dog to be fed with the refuse of the dinner-table, and where this is not sufficient, which is often the case, the owner of the animal ought to devote a small portion of his weekly allowance to the purchase of such food as may be necessary to supply the deficiency. A small quantity of barley-meal mingled with potatoes and milk, or pot-boiling, and given to the dog twice a day, at morning and night, as these are times when he is least likely to receive scraps from the house, will keep him well. In London offal meat is sold on purpose for dogs and cats, and in the country the butcher that serves the house with meat, will sell a large piece of offal for a mere trifle.

The pleasure children feel in the possession of an animal of this kind, will fully recompense them for any trifling sacrifice they may make in the way of fruit and cakes and sweets. If they are the children of wealthy parents, they are supplied at the table with all these little delicacies; and if they are not quite so well off in this respect, let me assure them they are wise to avoid the temptation of the cake-shop or fruiterer's. The nicest cake or the most delicious sweet-meat, when eaten, is the same as a bit of bread, only the latter is more wholesome, and less likely to make them ill.

Dogs should frequently be washed, especially such as are covered with curls; this keeps them from being offensive, and frees them from insects, that are both hurtful to themselves and annoying to those whom they may chance to come near. Dogs are subject to several diseases; when the eyes of the animal look

languid, and the hair begins to fall off, with other symptoms of indisposition, a small quantity of flour of sulphur should be mixed with their food, and the animal should be kept without meat. A small quantity of pounded nitre, as much as will lie on a shilling heaped, and given in their milk, or even common table-salt, will be of service in restoring the creature to its former healthy state. Want of cleanliness and over-feeding are most likely to produce disease.

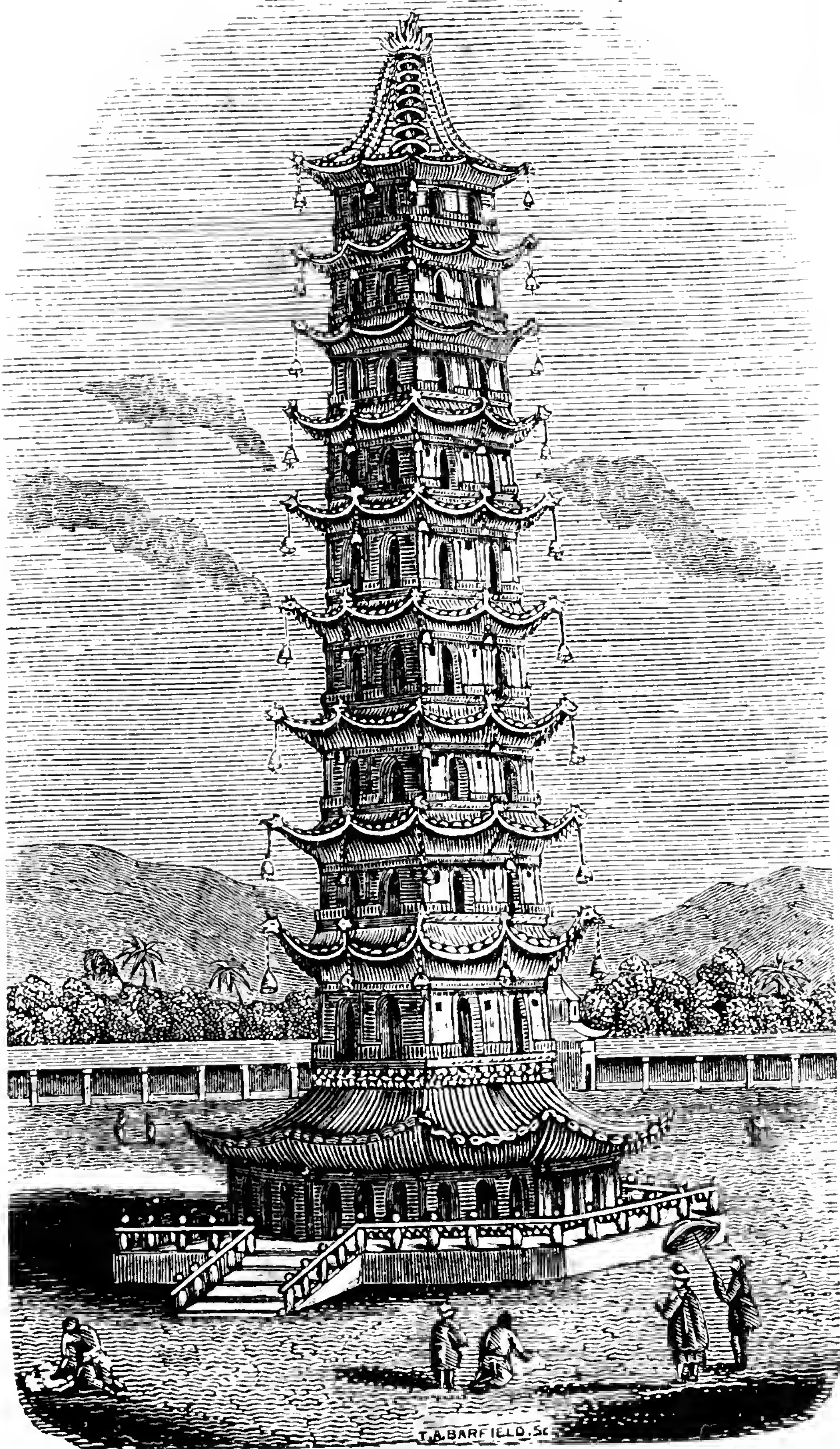
Dogs may be taught a great many amusing tricks; but to effect these improvements in their education, a degree of sternness and severity is required, or they will not obey their master's bidding. They may, when young, be taught to fetch and carry; to trust, which is a very useful point in their education, as it teaches them to be honest; to walk on their hinder legs with a stick between their fore paws; but though very amusing to witness, this attitude must be painful, and is certainly very unnatural, therefore I do not recommend it. These sagacious animals can be taught to pay money and to receive it. Papa knew a dog that went daily to the baker's shop with a basket to buy a twopenny loaf for his master, a cobbler, who lived in a cellar down the street. This clever dog brought the twopence in his mouth, and laid it down on the baker's stool, and waited for his loaf; and he would not carry home an over-day one; he would have a new one, or none at all; he would even take the change for a sixpence, and never failed of bringing the pence home right to his master. The cobbler got a deal of work, because persons that came to his shop to have their shoes mended, were amused with Trusty's tricks.

An old sailor, who lives in our vicinity, has a pair of fine black water dogs; one is named Robinson Crusoe, the other Friday. I have often seen these dogs pass our house harnessed to a little sledge, on which was placed the model of a man-of-war in full sail. This little ship was large enough to contain a small child, and really made a very pretty appearance. The two dogs were cunning-looking fellows, and trotted along very sociably with their marine carriage; it was very amusing to see them. The old sailor always walked beside the vessel, giving the word of command to his dogs; when a cart or carriage came in sight, the dogs moved out of the way to let it pass, just as horses would have done, and then galloped off again at full speed.

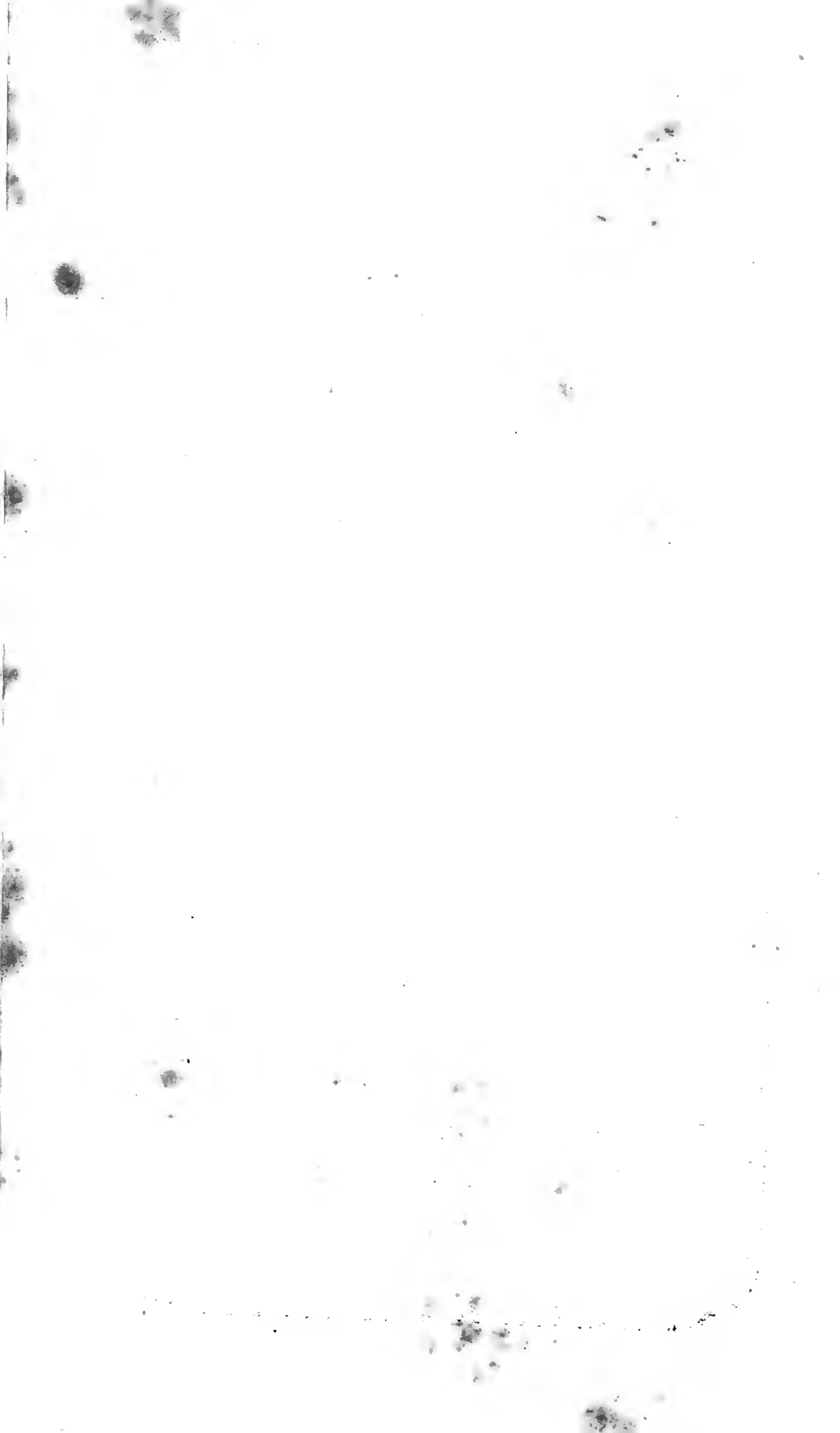
CHAPTER VIII.

The Porcelain Tower at Nankin.

While through the historical course of every other country on the face of the earth, wherever men are congregated in any considerable numbers, a progress towards civilization and refinement has been made, and step by step their tendency towards perfection has been perceptible, among the inhabitants of China time has effected few changes. As in the animal and vegetable worlds, so with them; a certain degree of attainment appears to have been reached, and then the stunted growth of intellect has come to a standard beyond which it appears equally unable and unwilling to advance. The sun that, like a giant, has for myriads



The Porcelain Tower, Nankin.



of ages run his daily course through the etherial vault, and witnessed in other lands stripling states swell and swell until they became the foci of extensive empires—seen, in his lengthened pilgrimage, long lines of sovereigns, beneath whose benignant sway their people have emerged from the depth of darkness to the meridian of intellectual day, gathered in succession to the tomb; and has witnessed mighty monarchies crumbled to the dust—still shines upon the same people, the same pursuits, the same customs, and bathes in his splendour precisely the same objects, with comparatively few additions and no difference, as threw their shadows from his beams three thousand years ago.

There is probably no problem in the moral history of mankind more difficult of solution than the present state of the Chinese. Having reached a high grade of civilization at a period long prior to that at which any state in the western world first shook off its native barbarism, an impassable barrier appears to have been put on their further progress. Had their position been merely the amelioration of savage life by the additions of principles or customs which would nourish among them those softer feelings which sweeten our earthly travel, or those higher promptings, which dignify humanity while they leave their possessors in the full exercise of their faculties in a state of nature, as among the Indians of North America,—or had it been that tameness of insipid pursuit which tends to subdue the more active energies of the heart, and by causing few wants renders the supply of those wants at the same time easy and certain, as in the occupations of patriarchal life,—we could not have wondered

that in a land of teeming fruitfulness, which pours its benefits into the laps of its inhabitants beneath a climate of unrivalled serenity and blandness, the people had remained contented with their happy,—however it might be in intellectual grade or political influence,—humble lot. But such is not the case. The Chinese exhibit every evidence that their civilization is that of a very complex state of society; and every day is bringing proofs that things which, in the fondness of our self-elated vanity, we have deemed inventions of our superior genius, were known to this extraordinary people long before those of our ancestors were born who have now for ages been mouldered into dust. The pursuits of trade render their marts of business scenes of busy resort,—their streets are crowded with multitudes whose countenances plainly indicate the general prevalence of absorbing and active occupation,—their dwellings exhibit the products of skilful industry, and are furnished with all the proofs of a refined though peculiar taste—while their grounds and gardens evince a fondness for every thing of natural beauty. Nor are they without a philosophy which, though it may not, according to our knowledge of it, have produced, or be likely to produce any very useful influence, has yet the appearance of considerable extent and depth.

Whether the plan of the exclusion of foreigners from every thing like naturalization, so steadfastly incorporated into their political system, and so rigidly acted upon, be sufficient to secure the tranquillity, which on the whole they enjoy, and for which it was doubtless, instituted, is dubious: but certainly its immediate effect must be to render the change of

manners most tardy, and the introduction of foreign customs almost impossible. The obstacles met with, by Englishmen especially, (and there are few people more persevering,) in either trading with the Chinese, or reaching, even when dignified by official distinction, the precincts of the "Brothers of the Sun and Moon," have been such as to render attempts to improve or alter the habits of the people at the best discouraging, and generally useless. It is not therefore surprising that every thing found among them should be essentially *national* and especially indicative of the character of the country—all is *Chinese;* and did we not know that we were in the land of the tea shrub, if it were possible that we could be unconsciously transported thither, every thing around would tell us so.

Their buildings eminently possess this peculiar characteristic, and none more so than the Porcelain Tower at Nankin. Standing in one of their most important cities, and towering far above the adjoining buildings, it is at once a conspicuous monument of the skill and genius of the people.

Whether pagodas were built for devotional purposes or not, has been considered doubtful. For some time an impression prevailed that such was the case. The remarks of later travellers, however, intimate that it is not so, but that they were erected rather as monuments of some remarkable event, as was often the case among the Greeks and Romans; but the best authorities seem to establish the fact, that they are a species of fanes; monuments, it is true, but having a religious object, and answering precisely to those which are constantly met with in Catholic countries,

devoted to particular saints. This view seems decidedly proved by the circumstance that in the niches of the nine-storied pagoda staircase, there are at certain intervals Budhist images placed, and also others of the goddess Kuan-yin. Like all other mouldings and carvings in China, however, these images are executed in a very rude and clumsy manner; and did we calculate the religious fervour of the people by the representations of their deities, we might well assert that devotion is at a low grade among them.

The Portuguese were among the first, if not the very first, of European voyagers, who visited this land of strangeness, and to them we are indebted for the impression that pagodas were temples of religion, but this, as we have shown above, we believe to be fallacious; at any rate, we have no reason to believe that the Porcelain Tower was ever used for that purpose. Some writers have positively asserted that, if not used as temples, pagodas were, nevertheless, attached to erections of that kind, just as steeples are to our churches; though of this, also, assertion is all the evidence adduced in confirmation of the opinion. At least, we can discover none with respect to the particular instance of which we speak, however much its form might induce the supposition.

Whether they be strictly ecclesiastical edifices or not, it is certain both that they are numerous throughout the *celestial empire*, and that a marked reverence is entertained for them.

Though they all partake of the same design, there is great variety as well as elegance in the forms of their erection. Having a series of stories piled one over another, each with a sort of pent roof projecting

above it, they might seem to have been built as much for watch or warder towers as for any other purpose, though we are not aware that we have any statements indicating them to have been used as places of strength. They are for the most part but low in their construction, being generally not more than from twenty to thirty feet in height, though those attached to the residences of noblemen of high rank, or which are met with in any of the principal cities, sometimes reach the elevation of seventy or eighty. They are often built of stone, but most frequently of brick, faced with plaster or stucco work, and are generally objects of considerable beauty, adding much to the effect of the objects they embellish. The one of which I am now about to give an account, is the loftiest and most considerable in the empire, at least so far as we are acquainted with it, and by the Chinese is looked upon with especial respect.

Orders are issued from the imperial palace that no foreigner should be allowed to pollute it with his presence, and accordingly the utmost difficulty has ever been experienced in reaching even its neighbourhood. The laws of exclusiveness are those most strictly acted upon, and neither threats nor bribes appear to be sufficient to overcome the fears of the timid guides who conduct travellers, or of the soldiery who form their escort. A number of gentlemen, who were attached to Lord Amherst's embassy, once endeavoured to obtain a sight of this far-famed building, and the people who accompanied them carried them through a part of the city, until from an elevated spot they could obtain an excellent view of it, but no inducements could prompt the Chinese to lead

the strangers nearer. Eminently calculated, as we may well conceive it is, to strike the European eye, their expectations were more than realised. Gleaming whitely in the sun, it stood far above every other object, distinguished alike for the elegance of its form, and the brightness of its appearance. It rises to the height of two hundred feet; and divided into nine stories, which gradually diminish in size as they approach the top, its aspect is most singularly picturesque.

The interior is chiefly of brick-work, but having the interstices filled up with much of mortar or plaster; but the exterior is covered from the summit to the ground with the finest uncoloured porcelain, and from this it derives its appellation.

The site of ground occupied by this pagoda is considerable, though we have no exact measurement of its extent. Of the data of its erection we are equally ignorant, as also of the person who founded it; for the Chinese records, in many instances, entering into details of numerous and important events, in such a way as to be insufferably tedious, are very often irregular, and not a little confused. It stands in the centre of a large area, and is itself set on a sort of platform, or basement of solid masonry, round which runs a dwarf wall of great thickness, and upon this is placed a balustrade. The floor of the basement is attained by a broad flight of steps, and in the middle of it rises the Tower itself, resembling a large beacon light more than anything else. The ground-plan is octagonal, and that figure is preserved to the summit, which is surmounted by a spiral ornament, stayed by chain-work to the sides of the building. At the point

of each projection are hung a number of bells, or ornaments resembling bells; thus partaking in this, as well as in other respects, of the style of Moorish architecture.

In the interior, a small clear space is preserved, which rises uninterruptedly to the very top of the tower, and between this and the external wall a spiral staircase is constructed all the way up, in the niches of which the little images are placed of which we have spoken. Whether the external coating be laid on in plates, or whether the porcelain was plastered on in the clay, and has become partly vitrified by the sun, no traveller has informed us; the jealous circumspection of the Chinese having prevented anything but a very cursory examination of this singular building.

Happily no question, either of history or morals, depends upon the elucidation of any difficulty which we meet with either in the customs or records of China, and it is, therefore, little to be regretted that we do not possess, or are able to obtain, any more than a slight acquaintance with the objects of interest, scattered as they are, at considerable intervals, over their immense territory. One thing, however, we may learn from the existence and position of the nine-storied Pagoda, that though it may be slow and impeded, in a land where the mildness of the climate, and the clearness of the atmosphere, cause little injury to physical objects, and where the disposition of the people has ever kept them from numerous or violent moral tempests, yet does the finger of time leave its traces of decay and change on every thing beneath the sun, and even here the revolutions of ages are

bringing about that concurrence of. effects which shall ultimately result in the assimilation of mankind to one standard of character and one form of manners—a standard and form in which power shall be based upon intellect, and Christianity constitute its principle. Even this far-famed pagoda, lifting its head amid the noiseless and languid streets of Nankin, adds another monument to the memorials of Persepolis and Thebes, that superstition and deceit, though their secession may to human eyes seem slow, shall in the end give place to universal truth.

CHAPTER IX.

The first pair of turtles I ever saw, were purchased by Agnes and Jane from a lad, the son of a poor weaver's widow, who had been left in very distressed circumstances to provide for a large family of helpless children: his mother said she could not afford to keep the doves, because they had no food to give them, unless it was bought with a part of the money that was earned to provide bread for the family; she therefore insisted that her son should dispose of them.

It must have cost the poor boy a severe struggle to have sold his cherished pets; the pretty, soft, gentle creatures that he loved so tenderly; but he felt it was his duty to do so, and the consciousness of acting rightly, softened, in some measure, the anguish he felt: he knew that nothing but the direst necessity would have induced his indulgent mother to have in-

sisted on so painful a sacrifice on his part, and he did not add to her grief by refusing to obey her commands, so the doves were sold.

At first the doves were without a cage, and we were obliged to keep them in an unfurnished chamber during the night, but in the day-time they sunned themselves in the window of the little breakfast-parlour, that looked into the street. They used to look pretty enough perched on the boughs of the large giant scarlet geranium, or the locust plant that stood on the window-seat.

We were much amused one market-day, by overhearing a dialogue that passed between a market-woman and her son, a great awkward boy, in clouted shoes and a slop-frock. The boy happening to espy the birds, asked his mother what they were: he said he did not think they could be blackbirds, nor yet thrushes nor fieldfares. "Why, child, don't you know that they are a pair of *Poll parrots*," the mother replied; "and I dare say they can talk right nicely. Pretty dears, how sensible they look!" she added, chirrupping the doves.

In a short time the doves became so tame that when my sisters came into the room to feed them, they would fly from the cage and flutter to their shoulders, or nestle in their bosoms, and pick the barley and crumbs of bread from their hands; but being rather fearful of their falling a prey to cats or rats, we purchased a large wooden cage, painted green, and nicely fitted up with a locker in each corner, and a perch for the doves to sit upon; the bottom of the cage was unfastened, so as to admit of its being cleaned very readily, and there was also a little door at the

back for us to pu tour hand in and take out the doves if we liked to fondle them.

In size, these birds were somewhat bigger than a large blackbird, in colour of a pale fawn, almost approaching to a cream; nothing could exceed the exquisite delicacy and neatness of their plumage. Their eyes were remarkably handsome, of a fine hazel, with a red ring round the irides: the eye-lids were circled with fine white feathers, so small that they only looked like a velvet edging. The coverts of the wings and the tail-feathers were slightly barred with streaks of a dusky black, the legs and feet were of a pale pink. Barley and crumbs of bread, was the principal food we gave them, with fresh water, and the cage was strewed with fresh sand every morning.

When we left our residence in the city, Agnes and Jane presented their doves to a lady, who had shown them much kind attention; and they lived very happily in her green-house among the geraniums and other beautiful exotics.

Some months after our return home, my eldest sister was surprised one morning by receiving a basket, in which was inclosed a pair of beautiful doves, larger and handsomer than those we had formerly possessed. There was neither note nor letter in the basket, nor any clue by which we could form an idea of the person from whom they came. The carrier could give no further information on the subject, than that the basket was brought to the waggon by a little black girl, whom he had often seen waiting as a porter in the market-place, but whom the sender was we never could learn.

Eliza was delighted with her present, and caused

the dove-cage to be fixed against the south wall of the house. In this situation they seemed perfectly happy, and soon became so much attached to their cage, that though Eliza often allowed them to fly abroad, and take their pleasure among the trees in the garden, they seldom went further than the grass-plot, and always returned to the cage again at night. If the glass-doors of the sitting room chanced to be open, they would walk in and pick up the crumbs from beneath the table in a very orderly manner.

During the spring time they filled the garden with their soft plaintive cooings, reminding us of that beautiful passage in the Canticles descriptive of the return of the season of flowers:—

"Lo, the winter is past; the rain is over and gone; the flowers appear on the earth; the time of the singing of birds is come, and the voice of the *turtle* is heard in our land."

Towards the middle of May the doves signified their wish to prepare a nest, by picking up feathers and bits of straw and hay that they chanced to meet with in their little journies abroad. Eliza, who was very attentive to the wants of her little favourites, supplied them with a small whisp of hay, which they soon conveyed to one of the lockers, and there formed a hollow nest for the reception of a pair of white eggs, which were shortly after deposited in it. Like the pigeons, they sat by turns, sharing equally between them the task of parental affection; these amiable little creatures afforded an example of fidelity to each other, and of self-devotedness to their unfledged offspring, that was truly interesting and well worthy of imitation.

The young of the turtle, like those of the other

species of pigeons, and of all the small birds, when hatched, are in a very helpless state, being destitute of feathers, and blind, consequently unable to provide for their own wants. Nature, to make amends for this disadvantage in the young brood, has given a double portion of affectionate solicitude to the parent bird; and has wisely limited the number of offspring in those species that require such close attention to their wants, while she has multiplied the broods of those that are able to shift for themselves directly they leave the shell.

The nests of the smaller birds, of those belonging to the order of *passeres*, seldom present more than from four to six eggs, excepting in a few instances, as the wren and titmouse. The pigeon and some of the water-fowl only lay two, while all the gallinaceous tribe, the common hen, the turkey, the goose, duck, peafowl, pintado, and the partridge, quail, and pheasant, are very numerous; the broods of some of these birds varying from twelve to twenty. The reason is evident. The hen is here unassisted in her task of sitting, and providing for her young. Had she to find food for each member of her numerous family, the task would be too tedious for a solitary creature to accomplish; but such is not the case: she is merely required to play the part of a guardian and nurse, and in this capacity she leads her brood to places where they may find food for themselves under her direction; nor does she leave her chickens, till they no longer require her protection; while these birds that have devoted themselves so entirely to the care of their helpless nestling, are sooner released from the fatigues of attending on them: as soon as the callow brood are

able to fly abroad, they quit the parent nest, and wing their flight whither instinct leads them.

Thus we may perceive, that the cares of each species are pretty equally balanced by that benevolent God who ordereth all things wisely for his creatures.

Sometimes, when I have cast my eyes abroad, on the leafless, fruitless trees, and barren fields in winter, I have been apt to indulge a fear for the preservation of the smaller quadrupeds, and the feathered race; but a little reflection on the bounty of their Maker, and a little observation on what was going on in the animal and vegetable world, soon banished my doubts, and convinced me "that God doth indeed take care for fowls," as an old writer, (Anthony Horneck) saith; "their provider neither slumbers nor sleeps, neither can he be weary: he openeth his hand and filleth all things living with plenteousness."

Let us, however, my young friends, convince ourselves of the truth of this, by looking abroad with our own eyes on the fields, where we may behold a part of the divine economy that is exercised in the provision of the animal creation. Take, for example, a field of ripened corn during the time of harvest. On one side the busy harvest-men are at work, reaping the corn and binding it in sheaves to fill the barns and granaries of the owner; not far from them are the children of the poor, the aged, and the infirm, with eager eye, and careful hand, gathering up the scattered ears that have fallen from the hand of the reaper: but the blessings of this plenteous season are not alone confined to man; flocks of birds assemble from early morn till dewy eve, to feast upon the grain that has been shaken

from the husk; the field-mouse, the dormouse, the rat, the hedgehog, the rabbit, the timid hare, and others of the smaller quadrupeds, approach each in its own season to share the spoils. Nor are the insect tribe forgotten: many thousands of larvæ feed on the refuse grain, while that which escapes the notice of these humble gleaners, takes root and springs to verdure, forming a store of vegetable food for those animals that require green herbs for their winter sustenance; nor is this the least admirable part of the economy of nature, that portion of the grain which contains the germ or principle of vegetative life is last touched, and often entirely rejected by the insect worm that feeds upon it, by which wise regulation it again becomes serviceable to the inferior members of God's extended household.

The harvest, which is a season of plenty and rejoicing to all creatures, is not employed by the little denizens of the fields and woods in a mere gratification of appetite; like man, they too employ this time of abundance, in laying up a store of provision for their future wants.

As if endowed with the nicest power of calculation, they never violate the economical law with which they are guided; they neither lay by too much, nor too little for their wants: and to prevent their suffering from a lack of food during the cold season of the year, the greater part of the smaller quadrupeds pass their time in a state of happy insensibility, only reviving on sunny days, when they recruit their bodies by taking a portion of the food they had providentially laid up in their little magazines.

The birds, which lay not up for themselves a winter

store, which have neither storehouse nor barn, find food in the berries with which their careful Provider has plentifully furnished the trees and bushes. To such, the holly, the ivy, the hawthorn, the mountain-ash, the sloe, the wild-rose, the bramble, the mistleto, the red berries of the honey-suckle, and even the deadly nightshade, and the no less poisonous briony, which may be seen at the fall of the year flinging its elegant festoons of coral-coloured berries from bough to bough, twining in rich garlands around the tender saplings and leafless twigs of our hedge-rows; these afford a delicious feast for the soft-billed birds; while those species that seek more substantial fare, flock to the newly-sown corn fields, or throng the farm-yard and barn-door, to gather the scattered grain. The insectivorous birds are directed in their search to hollow trees, old buildings, and fresh-turned furrows, in search of their food; some of these, as the robin and sparrow, take whatever food falls in their way, and will by turns feed upon corn, fruit, or insects. Some birds migrate to warmer, more genial climes during the severe weather, and return again when blue skies and spring weather invite them back. Some pass much of the winter in a partially dormant state; and all, I believe, are capable of maintaining a great degree of abstinence, so that they suffer less from hunger than may at first be supposed. Thus we may perceive, by a little observation in our study of nature, some of the means which are employed by the great Author of the universe in the preservation of his creatures. What one set of beings reject as pernicious, is eagerly sought after as nourishing food by another; that which man refuses, is gratefully accepted by the

creatures that surround him; even the crumbs that fall from his table are picked up.

In the natural world we perceive the most judicious, the most minute economy observed; even from corruption springs forth usefulness and beauty; trees and plants shed their leaves and branches on the ground, and they wither and decay, but the death of the parent plant gives new life and vigour to the succeeding ones, that are destined to supply its place; the seed that was shed, is nourished by the vegetable soil that has been formed above it, and the new vegetable springs into life, rendered more perfect by the death of its predecessor. It has been beautifully observed by an eminent French writer, remarking on the economy of nature, that "SOMETHING GATHERS UP ALL FRAGMENTS, AND NOTHING IS LOST."

But in calling your attention to this interesting subject, I have lost sight of my sister's unfledged turtles; and lest I should tire you with my grave discussions on natural history, I shall dismiss it for the present, and proceed to tell you that our little doves lived, and grew fine birds, and were presented by Eliza to a young friend, who was delighted, you may suppose, with such a gift.

The old turtles hatched three pairs of little doves the first year, two only of which lived to be fully fledged; these were also given away when able to shift for themselves.

The fate of the old ones was rather doleful. They had been allowed to fly abroad as usual, and being very tame and not sufficiently on their guard against a cruel tortoise-shell puss that haunted the garden, one of the two fell a victim to her arts. The other died

from cold, as we suppose, the cage not having been taken into the house before the commencement of the wet season.

I have related the disastrous end of our gentle favorites, as a warning to those young people who keep birds, or dormice, or rabbits, that they may be rather careful in admitting cats among their collection of dumb favorites; for though a kitten is a creature of attractive appearance, for beauty and softness, and also for the playfulness of its ways, it is, nevertheless, rather dangerous, on account of its natural destructive inclinations. These are sure to be indulged whenever a suitable opportunity occurs; therefore I would advise great care to be observed in the encouragement of the feline species, where there are any of the above-named little animals kept.

The turtle is a native of eastern countries, and cannot endure any great degree of cold; care should be taken to remove the dove-cage to the house, or some sheltered situation, in due time. The Mahometans hold the blue dove of Mecca in great veneration, and there is a severe penalty against these birds being sold to strangers. They are also held in great esteem in Barbary, by the Moors.

CHAPTER X.

When we were children, papa would never supply us with toys, which he foresaw would only be broken and idly destroyed, but rather encouraged us in finding amusement for ourselves from more rational sources; such as gardening, keeping rabbits, pigeons, silk-worms, hatching chrysalises, and such like. If we desired toys, we were obliged to exert our own ingenuity in producing them from such materials as we happened to have in our possession.

During the winter, or in rainy weather, when we were more confined to the house, we used to employ ourselves in making and dressing what we called rag dolls; these were little dolls about the height and thickness of a grown person's middle finger.

We first formed the head of a small ball of soft cotton wool, over which we carefully drew a piece of fine linen or cambric, taking great care not to let any rucks or wrinkles appear on the face; we then twisted a piece of strong cotton or thread round the part which was to form the neck, and fastened it securely with a needle and thread; the remainder of the cloth was then stuffed, to form the body, and sewed neatly down behind; as to feet, our lady-dolls' dresses were made very long, and therefore the want of them was not noticed; the arms were only narrow strips of cloth folded to a proper thickness, and sewed down with fine cotton. Our gentlemen-dolls had legs, and were dressed in scarlet cloth trowsers, with black velvet or silk coats. We had brown or black cotton wool for

hair, and the faces of our rag-dolls were duly painted with eyes, nose, and mouth, by Eliza, who was the fortunate possessor of a guinea drawing-box, a present which papa had brought her from London. These dolls were our delight, and to increase their wardrobes in any way, was our most pleasing employment; but this was only permitted in our leisure hours, when our regular tasks of needle-work were completed. We had dresses of crape, and satin, and gauze; of net, and silk, and muslin: bonnets and caps we had also, the tip of our middle finger being our usual cap-block. This elegant assortment of wearing apparel was kept in paper or paste-board boxes; the materials for making them were deposited in bags. Each of us had our respective family of dolls, so that no quarrel or dispute could arise about them.

Beside rag-dolls we had paper-dolls, not like the common ugly paper-dolls that you sometimes see with round heads, or steeple-crowned hats; ours were delicately cut out with wreaths, and crowns, and Grecian and Roman helmets: we were as particular in our opinions respecting the beauty and elegance of our paper-dolls, as the most profound critic in the fine arts could have been in estimating the merits of a fine piece of painting or sculpture.

These dolls were also adorned with robes, as we termed their dresses, but they were merely cut out with the scissors, two holes being snipped (not too large) for the arms to be passed through, and the dress confined to the waist with belts of brightened caddy lead, or gold tinsel; the latter, of course, when it could be procured, was preferred; but in default of these adornments, a sash of silk was substituted. We

kept our paper-dolls between the covers of old memorandum-books, which papa gave us for that purpose, as we were apt to injure better books by carelessly turning the leaves or injuring the binding.

Wax dolls and wooden dolls we never cared for. I had quite an antipathy to the latter, from having had my head nearly broken by the headless trunk of a great wooden doll having been accidentally thrown at me by my little brother, when we were playing together on the carpet; and as to the former, I was so rebuked for devouring the wax arm of a beautiful doll nearly as large as a baby, that was given me out of mamma's wardrobe to hold on my lap for a few minutes, to console me for a black eye, occasioned by a fall, that I never looked with much pleasure on wax dolls from that time. It was a sad trick to eat up the poor doll's arm!

Then we made chairs, and tables, and sofas, and carpets, and cradles, of card, covered with cloth or satin; and when we wanted to play with our dolls, we ranged these things on the window seat, or the table, or our stools, and furnished what we called our parlours and drawing-rooms for our company to sit in. We had besides these, card and paper horses, and carriages, and flocks of sheep, and dogs, and cats, and lions and tigers, and even elephants, which were contrived to bear some resemblance to the pictures from which they were drawn. Agnes was always the most ingenious in cutting animals in paper, and in making paper and rag dolls. These were some of our winter amusements.

In spring and summer we used to spend much of our time in the plantation, especially in one part called

the dell, a beautiful deep shaded place, which was all enamelled in the spring-time with knots of primroses, and several sorts of violets; there was the sweet-scented deep blue violet, as large as a small heart's-ease, and the small blue sort; and there were daises, and blue bells, and the purple orchis, and the wood orchis, with many other pretty spring flowers. Here we used to hear the birds singing all the day long among the bushes or tall trees, or see them building their little nests, or teaching their young nestlings to fly. Sometimes we were gratified by the sight of a beautiful woodpecker, running up the rugged bark of some hollow tree, in search of insects. The appearance of this splendid bird soon put an end to our sports, and all other objects were for a time lost sight of, while gazing on his lovely plumage—his crimson head and green breast and back, his curiously-shaped feet and large bill, with his red awl-shaped tongue, which was darted into the bark of the tree from time to time in search of his insect food.

The nightingales used to sing too among the thick bushes even at noon-day, and the ringdoves filled the dell with their plaintive cooings.

Whenever the weather permitted our spending any portion of the day abroad, we used to resort to our favorite dell, where one of our chiefest amusements consisted in building grottos, as we termed little huts about a foot in height, that we constructed with twigs, stuck into the ground, and woven together at the top and sides, and lined and thatched with moss, collected from the roots of old trees, or the sides of dry ditches. Some of these buildings were square, with flat roofs; but our favourite style of architecture was an arched

roof, as this was easier of construction, and far more durable. Some of these little buildings would stand uninjured for months; the chief damage they received was from hedgehogs, and other small animals, overturning them in search of the insects that found shelter beneath the moss with which they were lined.

The interior of the grotto was generally adorned with the softest and closest moss, over which were arranged striped snail-shells, which we sought for on dry sandy banks, or at the foot of old trees, where they had been left by their former tenants. These we arranged according to fancy within the moss-covered walls of our little grottos, intermixing them with any pretty bright stones, spars, pieces of gypsum, or sea-shells, we chanced to possess.

We furnished these sylvan dwellings with chairs, woven from slender sprays of the golden-barked willow, mattresses of braided grass, and wooden tables and stools: these last articles of furniture were made simply by means of small pieces of wood being placed on pegs driven into the ground at certain distances.

In front of these little buildings we laid out gardens quite on the fairy scale, and planted all sorts of wild flowers in the tiny parterres;—buttercups, celandine, cowslips, orchis, daisies, and bluebells: also regularly-planted beds of wild or wood strawberries. In spring our gardens displayed the variety of a few crocuses, snowdrops, or a tuft of purple thrift, or London pride.

These woodland gardens were not, however, very favourable for the growth of garden flowers, which re-

quired more sun and richer mould than our borders afforded. When I tell you that our grottos were intended to represent the country-houses and villas of our rag dolls or our paper dolls, you will no longer be surprised at their size or ornaments.

Our taste for architecture was not confined entirely to these little edifices. We had read Robinson Crusoe, and an abridgement of the life of the hermit Quarl; besides being well acquainted with Sandford and Merton,* we resolved to build a house in the dell on the same plan which Harry and Tommy built theirs; but being girls, we could not proceed in quite so workmanly a style as they did, and were obliged to content ourselves with a hut of ruder formation, made simply of boughs that had been lopped from some fallen pine trees. These branches we contrived to drag to the centre of the dell, where we had marked out with a pointed stick the space our building was to occupy, and its form.

With great toil (for our implements were very rude, and the ground extremely hard) we bored holes to admit the sharpened ends of our boughs, and placed them as close together as possible, interweaving the smaller branches and twigs, which we had purposely left on the outer part to strengthen our walls; the shape of our hut was a semicircle, so that all the boughs met at the top of the building. We then applied to Ruthen, the woodman, (who was at work peeling the bark from the oak trees he had just felled,) to tie the tops together with a stout elm *withe*. This being done, we next proceeded to thatch and line our

* The best and cheapest editions of this and numerous other Juvenile Works, are published by E. Lacey, 76, St. Paul's Church Yard, London.

hut; for this purpose the younger part of the community were despatched to all parts of the plantation to collect moss, and cut bunches of dried grass, while the elder girls were thatching the outer walls with pine-bark, which they fastened with wooden pegs, cut and sharpened for the purpose. A seat was then raised within the building of dried moss, well pressed together till it was sufficiently compacted; this was both soft and warm. The inside walls were filled with moss and grass, so that no cold air could gain admittance through the crannies and chinks. The floor was then covered two inches deep with white sand, which we procured from a pit close by, which had been discovered to us by those little miners the wild rabbits, and a carpet of moss, as green as grass and as soft as velvet, was then spread above the sand.

Our house was nearly a week in building, and cost us some hard labour; but I fancy Robinson Crusoe himself could not have felt greater satisfaction in the construction of his castle or his fortress, than my sisters and I did when our hut was completed, and the whole six of us were comfortably nestled together within its sheltering walls.

When papa beheld our building for the first time, he observed to a gentleman that was walking with him, "These children have built a hut exactly like an Indian wigwam."

We were all exceedingly puzzled to know what an Indian wigwam could be. We did not know till papa explained to us that it was the native name given by the North American Indians to their huts; which are slight edifices, built only with boughs of trees, or tall

poles, thatched with pine and birch bark, and lined with beds of moss and dried leaves. These rude sort of dwellings suit the habits and wandering lives of these people: they are quickly constructed, being often made by the females, and can be removed if required.

Among the savage nations these kind of huts generally prevail; they serve for the purpose of temporary shelter from the heat by day, and from dews by night: the sloping form in which they are built serves to throw off the rain, and the circular shape, if not more roomy, renders them much warmer.

It is supposed to have been the first order of architecture observed by the ancient patriarchs of the old world. As men became more civilized, and their minds enlarged, they began to improve the construction of their buildings, and make a variety in their form: doubtless, the progress towards this useful art was slow at first, convenience alone being the primary object in view in the formation of their habitations.

The ancient Germans and Britons, we are told, had no better lodgings than thickets, dens, and caves in the earth; in these rude recesses they laid up their provisions, and dwelt during the winter. Some of these *earth-houses*, as they were termed, are still remaining in Scotland and in Cornwall. The summer habitations of the most ancient Britons were very slight, and like those of the Finnians, (or Finlanders,) consisted of only a few stakes driven into the ground, interwoven with wattles, and covered with boughs. As they became a degree less barbarous, they began to improve these huts by filling the chinks with clay, and white-washing them, and employing wood and

stone for the walls, and straw and reed for the thatch. Such were the dwellings of our forefathers.

The earliest style of architecture is thus described by Vitruvius.

"Anciently men lived in woods and inhabited caves, but in time, taking example from the birds, who with great industry build for themselves nests, they began to construct regular huts. At first these huts were of a conical figure, because that is the simplest structure; composing them of branches of trees, spreading wide at the bottom and joining them in a point at top, covering the whole with reeds, or clay, or leaves of trees, to screen them from the sun, the rain, and tempests.

"The next order of architecture was square: the flat roof being supported by pillars of wood, the interval filled up with twigs, clay, or moss. By degrees the flat roof was exchanged for one sloping each way, which formed a gable at each end; the rough bark and uneven surface of the pillars were smoothed, and slate or stone introduced at the base and capital, which gave rise to the several original orders of architecture."

"Of these orders there are five: the Tuscan, Doric, Ionic, Corinthian, and Composite. The Greeks were the inventors of three of these orders; viz. the Doric, which derived its name from Dorus, the son of Helen and Deucalion, having caused a temple to be built in honour of Juno; this order was then first introduced, and from him called Doric. Ion, nephew of Dorus, invented the form of those columns called Ionic; which order was of a lighter and more graceful form than the Doric. It is said the Doric resembles the firm majesty of the masculine figure, while that of the

Ionic the more splendid figure of woman. The channelling or fluting of these pillars was intended to image the folding of the female dress, and the volutes of the chapiter, or upper part, the curls on each side her face.

"The origin of the Corinthian order is said to have taken its rise from the following accidental cause. A basket had been set upon the ground, and covered with a square stone or tile, near this grew a plant of acanthus. The leaves shot up and covered the outer surface of the basket; as the stalks rose up among them they soon reached the tile which overhung the edges of the basket at the top; this stopped the growth of the plant upward; the leaves then curled and twisted themselves to obtain freer growth. In this situation they attracted the attention of Callimachus, a celebrated sculptor, who, from its appearance, first conceived the idea of improving the two former orders of architecture.

"The Composite is a mixture of the Corinthian and Ionic. The Tuscan is of a solid plain form: it approaches nearest to the simple Doric."

I have introduced the above description of the orders of architecture, as they may not be known to my young readers, and will serve to show the gradual improvement made in the arts, from the simple huts first described, to the elegant and majestic buildings afterwards erected, and from which all the modern edifices have originated.

My sisters and I knowing nothing of the rules of either modern or ancient architecture, formed our hut on the precise plan of our ancient forefathers' primitive dwellings; in pretty nearly the same style as is still

observed by the savages of the South Sea Islands, and by the Indians of North America.

I must not lead you to imagine our leisure hours were entirely spent in amusements: we had employments of a more profitable nature. As we never possessed any money but what was the fruit of our own industry, we gladly undertook many little jobs, by the performance of which we were enabled to earn pocket-money, so that if we were without cash, it was our own fault: papa would always find something for us to do if we were willing to work.

In the spring there were borders to weed or seedlings to transplant, and tobacco plants to top. In the summer there was fruit to gather for home-made wine, for which we received one penny per peck; ripe seeds to collect, such as lettuce, radish, celery, parsley, cabbage, garden cress, with many other vegetables and pot-herbs; for all which a regular agreement was entered into, and a bargain made as to the price, before we commenced operations.

In the winter season, when working in the garden was not practicable, we earned a little weekly stipend by cutting the leaves of the tobacco which had been cured in the autumn, for half a pound of which, when finely shred and rendered fit for smoking, we received the sum of eight-pence, and Jane, and Susanna, and I could manage to cut from half a pound to three-quarters of a pound with ease in a week, and find time for play as well.

Then we had kidney beans to shell, which had been hung up in the granary to ripen; or there were flower seeds to rub out and sift, and make into little packets against the sowing season: besides these things, papa

was very liberal in rewarding us for writing good copies. I have known him sometimes present Susanna and Samuel with the magnificent sum of three-halfpence for a remarkably good specimen of large text, as an inducement for them to go on and prosper in attaining the valuable art of caligraphy (fine writing); for my own part, a penny was the most considerable sum I ever received, and that not so frequently as I might have done if I had taken due pains.

Sometimes, as a mark of especial favour, papa would permit one or two of us to accompany him into the hay or harvest-fields, to carry his garden chair, his pipe, his burning-glass, or his silver goblet of wine and water; but towards the fall of the year, when haytime and harvest were over, he would then take one or other of us, according as it came to our respective turns, in the chaise, which was drawn by the old grey horse Billy, and drive us from field to field, to superintend his workmen, and give orders what work they were to go about.

In seed-time it was very pretty to see the droppers at work, and the men dibbling the holes for them to put the corn in. Papa used to say it was a good and a pleasant sight to see so many hands usefully and honestly employed, earning their own bread, and taking the first steps towards providing food for a large number of their fellow-creatures.

I remember well one bright but cold October afternoon, papa took Jane, Susan, and me, to one of the fields which had been cleared a few days before of a crop of potatoes; it was then undergoing the process of harrowing and picking. Not less than twenty little

girls and boys were at work, collecting the weeds and rubbish in baskets to be burned. Some were attending the fires, supplying them with fresh fuel, or lighting new ones in different parts of the field, while others were following the harrow, and picking from the furrows the potatoes that had escaped the eye of the labourers who had dug over the field—there was not an idle hand to be seen. The afternoon was cold, but every face glowed with the warmth of exercise, and cheerful good humour; for my dear father rode about the field from one group to another, encouraging the industrious, and saying something kind to all. One of the little girls brought a hot potatoe which had been roasted in the ashes, and presented to me. Perhaps you will smile, my little reader, when I assure you I never fancied anything more delicious than the potatoes we amused ourselves by cooking among the hot embers in that field.

I have often recalled that pleasant day in after years, and thought of the robins that warbled so blithely, and hopped so familiarly about us to share the morsels we threw aside from our frugal feast: while flocks of noisy sparrows and yellow-hammers filled the hawthorn hedge close by. There was the chirping grasshopper, that sang so shrilly in its mysterious retreat, always near, but still concealing itself from our sight. The bright flaming fires, and their blue columns of smoke that rose in the twilight air, or spread in wavy wreaths as the wind scattered them across the field, hiding from our sight the busy little crew who were employed in raising or renewing the fires. The cry of the homeward-bound crows, which were winging their flight in vast crowds to their distant pine-wood that rose in

solemn grandeur against the saffron-tinted sky. The rich rays of parting sunlight—the fresh bracing air that seemed to impart health and vigour to our frames —the bleating of the distant fold, with the light tinkling of the sheep-bell—the hum of the great black beetles; that the boys call clocks, as they whirled past us, mingled with the cheerful whistle of the labourers unyoking their horses from the plough in the neighbouring fields—were sights and sounds that often return to my mind, combined with thoughts of that dear parent whose presence was wont to cast a degree of cheerfulness over every scene in which he moved; and who, though he sleeps in a distant grave, far from the home he loved, is not forgotten by his children; and she whom he was accustomed to call his little Katie, still treasures his remembrance in her heart with feelings of undiminished tenderness and respect.

Previous to our quitting the field, papa called together all his little workmen and women, and paid each child for his day's labour according to the agreement he had made with him: to some he paid sixpence, to others fourpence, some threepence, and there were very little ones who only received twopence; but all were satisfied, and there was not a discontented face among the little group.

Papa had taken particular notice of three sisters among the second set of his little labourers. These children were at once remarkable for their extreme diligence and their pale and half-famished countenances; they were almost barefooted, and their garments were of the most deplorable description.

As we proceeded homeward, papa said, "Girls, I have often seen you making gowns, and petticoats, and

robes, as you call them, for your dolls; why cannot you contrive to exert your skill in making some decent garments to clothe the half-naked children? I shall bid Eliza, and Agnes, and Sarah, help cut out and contrive some clothes for these poor urchins, and you little ones shall make them under their direction."

Mamma, kind dear, soon provided us with materials for the work, and in a short time we completed a bundle of very comfortable clothes, in which we had the satisfaction of dressing Jemima, and Charlotte, and Louisa. Never were children more delighted with new clothes—never were children more happy than we were at witnessing their delight!

But this was not the only time that my dear father employed our needles in works of charity.

One day he came in from the harvest-field and said, "Come girls, lay by your samplers, and stitching, and fine-work: there are two little strangers unexpectedly arrived in the next parish, and their poor mother has scarcely a bed-gown to put them in. You may now set to work to make frocks, and shirts, and caps, as fast as you like, for the twin sisters have but one gown to wear between the two. Now it so happened that mamma was from home, and so was my eldest sister, but Agnes and Sarah, who were very expert in all kinds of needle-work, soon contrived to cut out of old half-worn frocks and other cast clothes, some little gowns, and shirts, and petticoats, and other needful articles of baby-linen, and distributed the work among us as they fixed it. We sewed so fast that by the end of the week our bundle was completed, and the following day we determined to set forth in search of the poor woman and her twin babies.

All that we knew of them was, that their name was Havard, and that they lived on the furthest outskirsts of the parish adjoining our own. After losing our way several times, we were at last directed to leave the village to our right, and go on till we reached a pleasant hill, at the bottom of which there were several red cottages, and in one of them lived Mrs. Havard.

Following the direction we had received, we left the village on one side, and descended a pretty hill, which afforded a most pleasing prospect: on one side lay low green meadows, interspersed with groves of poplar, silver-leaved willow, hornbeam, and the silver birch, which formed a light and pleasant shade as the afternoon sun brightened their verdant leaves.

At the foot of the hill flowed a rivulet of clear sparkling water, which was crossed by means of a mossy plank thrown athwart it: unless when swelled by rains, you might step across at its narrowest part. On the opposite side of the road, the ground rose with a gentle ascent, presenting to the eye a cluster of neat cottages with their respective gardens; beyond these the old grey tower of the village church peeped forth from among the spiral Scotch firs, the verdant larch, and the waving birch trees that surrounded the churchyard.

The fields were covered with ridges of fresh-mowed barley and shocks of ripened corn; while the graceful oat reared its light stem, and rustled with every passing breeze. Crossing the little stream, we approached the first range of buildings, but found each house securely locked, the inhabitants being all abroad gleaning in a distant part of the parish; a solitary cat sunning herself on the threshold of the door, or a hen

clucking her little brood, were the only living things we saw.

Following a path that led through a small hemp-land, we came to another cottage, and here our ears were saluted with a variety of infantine lamentations, which significant sounds led us to the conclusion that we had at length reached the house where the twins were—but we were mistaken. The door was opened by a girl of twelve years old, who was heating the oven, while her mother (a lame woman) was kneading bread and making short-cakes, at a clean deal dresser. On one side of the little room was placed a low form or bench, on which sat four small children from two to four years old; the bewailing notes that had reached our ears, arose from five cradles, in which were as many infant captives.

These babies were of all ages, from eight months to two years: some were asleep looking very peaceful and innocent, some were playing with the bed-clothes or sucking their fingers, others were expressing their discontent at the wearisome confinement to their wicker prisons; but the woman heard as if she were deaf as well as lame, for she made no attempt to console the cries that arose from the poor little prisoners; she bargained only for house-room, and to supply each babe with food from the store it had been furnished with by its mother, and she seemed to think a waste of tenderness perfectly unnecessary.

The woman of the house was very polite to us, and insisted on our sitting down to rest a little while; during this interval she informed us, that being lame she was not able to go gleaning herself, but earned as much as if she did by keeping a harvest-school, by which she meant to say, she took charge of those young

children in the neighbourhood who were too small to accompany their mothers abroad, or to be left at home by themselves. For the trouble of taking care of this infantry, she had either a peck of corn at the end of the gleaning season, or six-pence a week, the mothers finding food and utensils.

Each child had a separate pantry for itself, to which it seemed to have free access; the consequence of this ill management was, that the food that should have lasted for three regular meals, was being eaten all day long. The different qualities of these viands occasioned much disquiet among the little folks. One child had a large cold apple dumpling, another a heavy seed-cake, a third a great short-cake, as big as a dessert-plate and as heavy as lead: one had bread and butter, another had sugared bread and butter, a third had coarse brown bread, with only a lump of hard Suffolk cheese, termed in derision by such as can afford to buy the better sort, *bang* and *thump*. Some of the babes had bread and milk, others sopped bread sweetened; but to some of these little folks the sight of the apple-dumpling, the seed-cake, and sugared bread and butter, occasioned the deepest regret, accompanied by weeping and wailing over their own more homely provision.

After having rested about a quarter of an hour, we proceeded to the cottage we were in search of, which the woman of the house very obligingly left her baking to point out.

On reaching the cottage and tapping at the door, a voice from the upper room bade us come in. There was no one beside the sick woman at home, the nurse having begged leave of absence to glean a few handfuls

of corn. We ascended the chamber by a ladder (few cottages round us being built with a staircase). Every thing about the poor woman was neat and clean, and betokened good management. The twins were two tiny babies, not yet a week old; they were fast asleep, lying one on each side of its mother, but so exactly alike, that you could not have distinguished one from the other, only that Susan was dressed in a patch-work bed-gown, which had been put on to distinguish her from Mary; it was her only upper garment, so that our unexpected donation proved very acceptable. All our fatigue was forgotten in the pleasure we experienced in witnessing the delight and gratitude of the poor mother; and we returned home with tired feet, but with light and joyous hearts. Let me assure my young readers, if they would seek for pleasure, they may find it in assisting the poor and needy. They will find it is far more entertaining to work for babies, than for dolls of wax and wood.

The first needlework a little girl, who was on a visit to us, ever did, was making a frock and shirt for a poor baby. At first Anna refused to learn to hold her needle, or set in a stitch, and would be ten minutes between putting her needle into the cloth and drawing it out, till we told her of a poor child that had not any clothes to wear, and then this dear little girl resolved to overcome her idleness, and learn to sow and hem, that she might make a frock for the baby; and in a few days she finished the little garment, and went with us to carry it to the poor woman. I shall never forget the joy that lighted up her blue eyes when she saw the child dressed in the first-fruits of her own industry:—who would not purchase pleasure at so easy a rate?

Something is expected from us all, rich and poor, great and small; we have all opportunities afforded us of being useful to our fellow-creatures, and an account of every opportunity we neglect, will be demanded from us at that great and terrible day, when all people shall be summoned to appear at the judgment-seat of Christ: he himself hath declared it. Let us not, my young friends, incur the sentence passed on those who saw their fellow-creatures "naked and clothed them not, hungry and fed them not, sick and in prison and visited them not."

In the long winter evenings many little works of charity may be prepared; baby-linen, and other garments for poor children made, and if not immediately called for, laid by in a drawer set apart for that purpose, against occasion serves. I knew a kind old lady who always devoted the time in winter from twilight till the introduction of the candles, to knitting stockings, and handkerchiefs, and undercoats, for poor women, many of whom were saved from rheumatism and other painful complaints, by being defended from the cold. There are many hours of leisure from sunset to candlelight, when work of this kind might be carried on by young people as they sit round the window hearth, and pleasant stories be told or listened to, and questions and answers go forward, without interruption to the work.

Let me remind you, my young friends, that it is said by the royal prophet, "Blessed is he that giveth to the poor and needy: the Lord shall remember him in time of trouble.

"The Lord comfort him when he lieth upon a bed of sickness: make thou all his bed in sickness."

Solomon saith, " He that giveth to the poor lendeth to the Lord."

" Give alms of thy goods, and never turn thou away from the poor man when thou hast wherewithal to give, and then the Lord's face shall not be turned away from thee." (Tobit.)

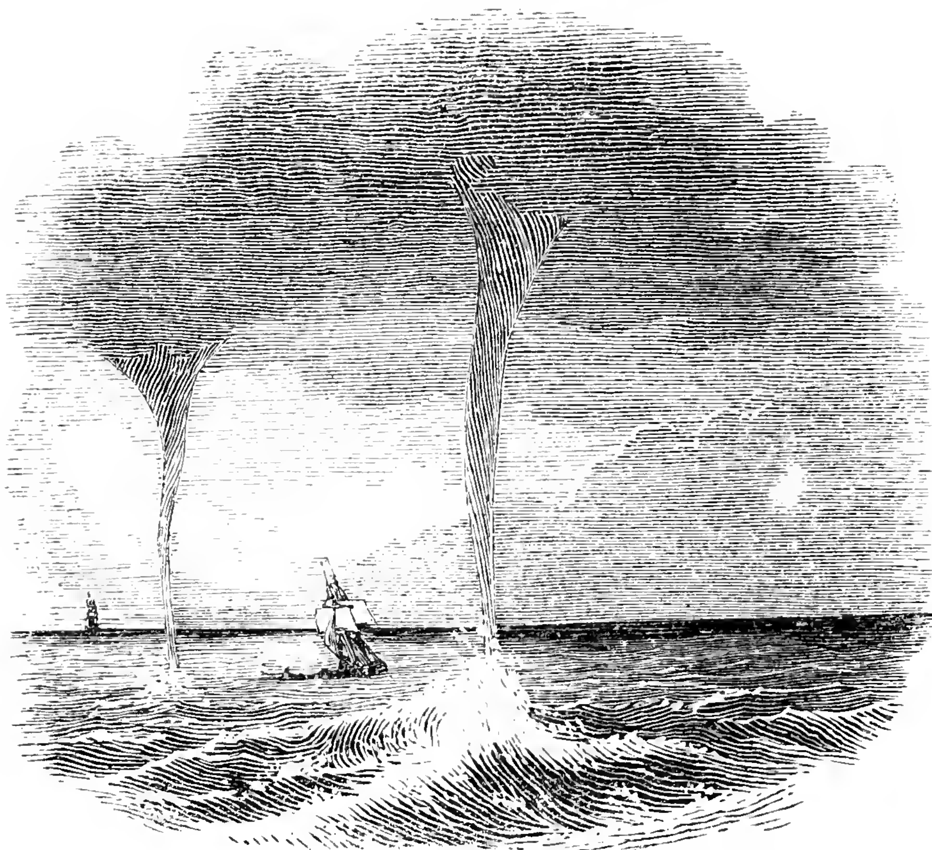
" To do good and distribute, forget not; for with such sacrifices God is well pleased." (Hebrews.)

St. John saith, " Whoso hath this world's goods and seeth his brother have need, and shutteth up his bowels of compassion from him, how dwelleth the love of God in him?"

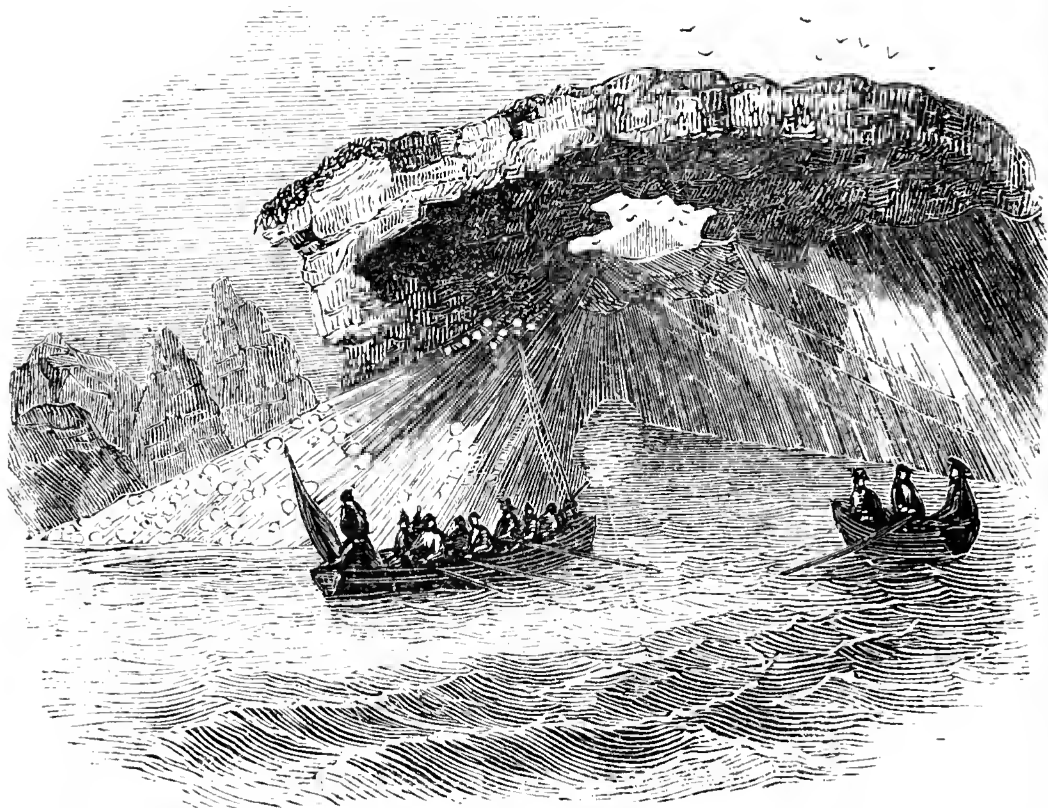
"If thou hast much, give plenteously; if little, do thy diligence gladly to give of that little."

Our blessed Lord commands " those that have two coats, to give to him that have none;" and to lay up treasure in heaven, where rust doth not corrupt, nor thieves break through and steal. He biddeth us to give, hoping for nothing again; to give, not only to the good and grateful, but to the unworthy; to imitate the bounty of our heavenly Father, who maketh his sun to shine on the just and on the unjust equally;" adding, " Be ye perfect, therefore, even as your Father which is in heaven is perfect."

But since imperfection mingles in all we do, let us, after having done all we can, acknowledge with humility of heart, that we are unprofitable servants, and pray to God to give us his grace to learn his ways, and assist us to walk in them, that we may stretch forward to obtain the prize of everlasting life, which we humbly hope to obtain through his mercy, and the righteousness of our Saviour Jesus Christ.



Water Spouts.



Basaltic Cave, Iceland.

CHAPTER XI.

Water Spouts.

The causes of water spouts are very complicated, and writers are considerably at variance concerning them. The earliest cause which can be assigned for them, is that revolving motion of a quantity of the air which we call a whirlwind; and when we fully understand this, and also that peculiar *affinity*—as we call it for want of a better name—by means of which the two have a constant tendency to mix with each other, to as great an extent as circumstances will admit, we are in possession of the elements of all the real knowledge which we can have upon the subject; and the rest is little more than the practical details of comparing one observed water spout with another, and noticing in what they agree and in what they differ.

The production of the whirlwind is rather an obscure matter, inasmuch as many causes may conspire to put the air in motion—such as the varied action of the sun upon different surfaces, the seasonal reciprocations of the hemispheres, and of sea and land, together with many condensations and expansions which take place within the volume of the atmosphere itself, without our understanding or our knowledge.

Evey one must have observed the little whirlwinds which sport along the highways in summer, raising up the dust in columns, agitating the waters as they pass, twisting the grass and corn into momentary circles, and making the loose leaves and small twigs twitter

about in the air as if they were alive. Sometimes, even in our mild and varied climate, more especially in those parts of the country which are broken by hill and dale, and land and water, a whirlwind will display itself with more power and majesty; and the march of such a whirlwind has been known to cut sheer through a plantation of considerable extent, and level everything so completely as if it had been felled by the axe of the woodman; and this last is a slight specimen of that energy of whirlwind that could produce a water spout.

Atmospheric air is in its quietude the gentlest of all natural substances—so gentle that little creatures, ten thousand of which would not make the ordinary volume of a pin's head, can breathe it with perfect impunity, and cannot live without its vital influence. But when the spirit of it is up, and the whirlwind comes onward riding on the hurricane, the most sturdy trees are leveled with the dust, the mountains shaken to their foundations, and the works and dwellings of men swept from the face of the earth. Therefore we need not wonder that the same power can raise a volume of water from the surface of the ocean.

In itself, the whirlwind is perfectly viewless and unknown to us, if it does not reach the earth or the water, and produce its effect there. We have a slight imitation of it in the stream of a river, especially when the channel is rough, and there are falls and rapids. In such situations, jutting points of rock, and even the sportiv play of the winds—which are always on the wing in places of this kind, produce little dimpling eddies, or whirlpools, on the surface of the water, which have no connexion with the general current of

its volume, farther than that they are borne downward along with it. In a deep nook, when the wind is very strong, a surface whirlwind, produced by the interruption and form of the rocks, will sometimes raise a miniature water spout to the height of a few inches, or even feet; but as this description of whirlwinds has nothing answering to it in the upper air, its little water spout never produces anything like a cloud; and the top of it leans over, and falls in palpable drops. Thus though the dimpling eddies of the stream, and the little water spout in the nook, give us some idea of the effect produced by circular motion, both in the water and the air, they cannot be considered as properly emblematical of similar motions in the grand atmospheric mass.

Still one thing is clearly observable; namely, that water spouts do not originate in the sea, or the other waters in which they take place; but that there must be a powerful action in a considerable volume of the air, and it must reach down to the surface of the water before the spout can be formed. How high we would require to ascend before arriving at a point where the air should be too much rarified for producing a water spout is not ascertained, although they have been observed to gain an altitude of nearly 2000 feet before extending outwards in a cloud.

The whirlwind occasioning a spout must be produced in the atmosphere, and extend to some height in it; and the atmospheric portion may take place, and produce its effects, without any water to answer to it on the earth's surface. When the strength of the whirlwind is sufficient, a dense clound forms by the friction of the air, which is in some way or other the

cause of the formation of all clouds ; and as the rotation continues, and the air near the axis becomes attenuated, though not quite exhausted, the central part of the cloud ascends, pointed at its nether extremity, and generally more or less bent. If the force of the whirlwind reaches the surface of the water, a similar point begins to arise ; and if the revolving continue long enough they meet, and the whole phenomena seems as if ascending from the sea. It does so in part, but not altogether ; for there must be an air cloud as well as a whirlwind to take it up at first. It must not be supposed that the water spout, although it is palpable to the sight, is a solid column of water. It is merely a cloudy pellicle,—a sort of tube as it were—passing gradually into air, both externally and internally, and more conspicuous at the sides than in the middle, because at them the eye sees through a greater extent of the water, which is rising in minute drops. We are therefore to understand that the revolving of the whirlwind, and the natural friction of air and water, are jointly the causes of the ascent of the water spout, which never can get up from the sea unless there is an ærial portion answering to it. When the column reaches down to the water, there is rarely any electric display, because that column forms a conductor as far upwards as the cloud extends ; it also shews us why the discharge of a shot against the column puts an end to the phenomena, which is done not actually by the bullet but by the new current which the bullet originates—cutting through the revolving air, and thus putting an end to the motion upon which the existence of the water spout depends.

Basaltic Columns and Rocks.

Of all the basaltic columns and rocks which are to be found in various parts of the world, the Giant's Causeway, in the county of Antrim, in Ireland, is, perhaps, the most stupendous.

This term appears to have been applied to enforce a belief that it was originally the work of giants. The study of mineralogy will, however, throw a new light upon the subject, and prove it to be the work of nature, and nature alone. The principal, or Great Causeway—for there are several less considerable and scattered fragments,—consists of a most irregular arrangement of many hundreds of thousands of columns. Almost all of them are of a pentagonal figure, but so closely and compactly situated on their sides, though perfectly distinct from top to bottom, that scarcely anything can be introduced between them. The columns are of an equal height and breadth; some of the highest visible above the surface of the strand, and at the foot of the impending angular precipice, perhaps about twenty feet. They do not exceed this height; at least, none of the principal arrangement. How they are fixed in the strand, was never yet discovered. This grand arrangement extends nearly 200 yards, visible at low water. How far beyond, is uncertain. From its declining appearance, however, at low water, it is probable it does not extend under water to a distance any thing equal to what is seen above. The breadth of the principal causeway, which runs out in a continual range of columns, is in general from twenty

to thirty feet at one place; or it may be nearly forty, for a few yards. In this account are excluded the broken and scattered pieces, of the same kind of construction, that are detatched from the sides of the grand Causeway, as they do not appear to have ever been contiguous to the principal arrangement, though they have frequently been taken into the width, which has been the cause of such wild and dissimilar representations of this Causeway which different accounts have exhibited. The highest part of this Causeway is the narrowest at the very spot of the impending cliff, whence the whole projects, where, for four or five yards, it is not above ten or fifteen feet wide. The columns of this narrow part incline from a perpendicular a little to the westward, and form a slope on their tops by the unequal height of the columns on their two sides, by which an ascent is made at the foot of the cliff, from the head of one column to the next above, in gradation, to the top of the great Causeway, which, at the distance of half-a-dozen yards from the cliff obtains a perpendicular position, and lowering in its general height, widens to about 20, or between 20 and 30 feet, and for nearly 100 yards is always above water. The tops of the columns, for this length, being nearly of an equal height, they form a grand and singular parade, that may easily be walked on, rather inclining to the water's edge. But from high-water mark, as it is perpetually washed by the beating surges, on every return of the tide, the platform lowers considerably, and becomes more and more uneven, so as not to be walked on without the greatest care. At the distance of 150 yards from the cliff, it turns a little to the east, for 20 or 30 yards, and then sinks into

the sea. The figure of these columns is almost unquestionably pentagonal, or composed of five sides. There are but very few of any other figure introduced. Some few there are of three, four, and six sides; but the majority of them are five-sided; and the spectator must look very nicely to find any of a different construction. Yet, what is very extraordinary and particularly curious, there are not two columns in ten thousand to be found, that either have their sides equal among themselves, or whose figures are alike.

Sir J. Stanley, in describing the basaltic columns and caverns on the coast of Stappen, in Iceland, states that the roofs of these caverns, five or six in succession, are supported by columns of basalt, many of which are also found strewed about,—some lying horizontally in heaps, with their bases pointed to the sea; some standing upright; and others inclined at different angles; many of them curved, not merely at the joints, where the convex end of one piece is fitted into the concave end of another, but bent throughout the whole length, like some of those on the island of Staffa, which Sir Joseph Banks has described as very much resembling the ribs of a ship. Hecla has a great name, but it is nothing more than a volcanic mountain, retaining a little heat; but Snæful Yokul, from its very graceful form, and snows, and situation, at the brow of the tongue of land dividing the two great bays of Brœde-fiorde and Fax-fiord, is a much more remarkable feature of the geography of Iceland than Hecla. And then its rise out of a basaltic base, and the contrast of its streams of lava with the basaltic columns, and the ferocity with which subterranean fires have broken and tossed about all over the coun-

try in its immediate neighbourhood, require that attention should be called to it to induce future travellers to give a great deal of their time to the observation of all its phenomena. The Yokul has, no doubt, been formed by repeated eruptions of lava, etc., from one crater; but the ground must have been burst in many places, for the shivering of the basalts, with the confused state in which they are found, and the throwing up of ashes and scoriæ in the pyramidal heaps in which they stand at the base of the mountain, and throughout the whole Syssel of Snæfellness, —there must have been eruptions, forming separate hills; for though at a distance, the high lands at the eastern and western ends of the tongue of land, dividing the two fiords, have the appearance of a continual range, when seen from the summit of the Yokul, no two hills are joined; but each tells the story of its own formation from fires exerting their force at different periods of time. I suspect that the heat not having been so intense in the earth when these hills were thrown up, as when great volcanoes cover miles and miles of country with lava, many substances might be found amongst them not much changed from their original state; that is, in the state in which they were before their last disturbance; not meaning that of their primitive state as parts of the original crust of the globe, when they were granite, syenite, or crystalized compounds, but what they were in beds of basalt, or any beds into which granite, etc., could have been changed by heat under pressure, and without contact with the atmosphere. I once saw some specimens, picked up in a gulley of one of these hills, by a friend of mine, which, I well remember, struck me at the time

as very like jasper and china. The whole line of the coast under the Yokul, is completely basaltic. It is absurd to suppose that, when the lavas of the mountains reached the sea, they cooled themselves into miles of such a regular columnar form. That lava, in cooling, has a tendency to become columnar, is certainly a fact. We find it in columns often in Iceland, in its very streams, but they are in strange irregular masses.

CHAPTER XII.

The first rabbit I ever possessed was a wild one, which lived in a dry sugar hogshead, occupying a spare corner of the coach house. I have a perfect remembrance of the time when this little animal was given to me; I was at work in the garden, cutting the decayed flowers of the purple thrift, that edged one of the long borders of the middle walk. This was a job papa had set me to do, and for which I was to receive, when completed, the important sum of threepence. Jane and Susanna, my fellow-labourers, were engaged in a similar manner, on opposite borders, when Robert Wade, the gardener, who was earthing up a bed of potatoes on a neighbouring plot of ground, beckoned me aside, saying, in a low voice, "Miss Kate, I have something pretty to give you, if you will come along with me, only do not say a word to the other young ladies."

Now I never could exactly understand the reason for this unnecessary charge of secrecy; and had I

been older (for I was but seven years of age) possibly I might have been wise enough to have declined accepting the gift on such terms; as it was, I entertained no such scruples, but willingly followed my conductor to the coach-house. Raising me from the ground in his arms, the gardener bade me look into the great hogshead, in which I beheld, to my infinite delight, four nice little grey rabbits, munching some carrot-tops and parsley. On our approach they reared up on their hind legs, and begged imploringly for the fresh greens which my conductor had supplied me with, for the purpose of feeding them. I had never kept rabbits, scarcely even seen these pretty, inoffensive animals, and I was so pleased and amused by watching their engaging behaviour, that it was with some difficulty I could be persuaded to relinquish my hold on the top of the tub, to which I clung while looking down on them. One rabbit in particular attracted my attention; it was distinguished from its little grey companions by a white spot on the forehead and white feet. This rabbit Robert said should be mine, provided I did not tell my sisters or brothers, or they would want to take it away from me, he was sure.

The pleasure I experienced from the possession of Whitefoot (for so I named my new pet) was greatly diminished by being forced to conceal the circumstance of his being mine from my sisters and brothers, to whom I would most willingly have imparted my good fortune; neither was I permitted to visit my rabbit as often as I liked, but only as it suited the convenience and caprice of the gardener, whose time was generally occupied when I desired to see my treasure. Some-

times, however, he would indulge me by letting me have my pet to nurse and fondle for a few minutes, when he was employed in the coach-house; but he steadily resisted all my entreaties to be allowed to keep my rabbit in a box by itself in the root-house, where I could feed and caress it as often as I wished. To this proposal he always replied: "If you tease me, Miss Kate, I shall take the rabbit away from you, and give it to some little lady that I know, who will be content to let it remain where it is: besides, it will die if you take it away from its brothers and sisters." This argument was to me a weighty one, and contained too powerful an appeal to my affections, for Whitefoot to be disregarded; so the rabbit remained in the sugar hogshead as heretofore.

The summer passed away, and the autumnal season was already far advanced. I had enjoyed the nominal possession of Whitefoot upwards of five months, during which time he had grown a fine creature, and exceedingly tame. He would lick my fingers, rub his head against my hand, and nestle to my shoulder when I took him on my lap. His skin was as soft and glossy as grey satin, and he was the darling of my heart. I was already anticipating with joyful expectation the time when he would be all my own, for Robert had hinted at the probability of his fitting up a hutch for Whitefoot in the root-house. This root-house, I must tell you, was a shed in a secluded part of the garden, near a small oval pond of water, and which papa had taken in hand to beautify, and render a very pretty and ornamental object, by planting Spanish, and gold, and silver blotched ivy on either

side the door-way, which he had turned into a gothic arch. The windows were latticed, and a screen of evergreens and flowering shrubs planted round, greatly improved the appearance of the place. The prospect of my rabbit being introduced into the root-house, and placed under my immediate care, was truly delightful to me; but alas! the end of our expectations does not always correspond with the beginning, and my childish hopes were frustrated in a manner as unlooked for as it was affecting.

One cold foggy afternoon, in the month of November, as I sat on a little stool beside mamma, hemming the bottom of a new diaper slip for my baby sister, only looking off my work occasionally to kiss the dear little thing, or touch the waxen cheek and dimpled hand that rested so quietly on mamma's bosom, we were suddenly interrupted by the abrupt entrance of Thomas, my youngest brother, who ran into the room, quite out of breath, and evidently much discomposed. His usually red cheek was colourless, his grey eyes expanded, and gleaming through the tears that still hung in his long black eye-lashes.

"What is the matter with my dear little boy?" asked mamma, anxiously regarding the trembling child. (I must tell you that my brother Tom was not quite five years old at this time.) "Dear mamma," he replied, "I am so vexed, for William (a labourer papa had put into the garden to help Robert the gardener, who had been sick with an autumnal fever) has just killed a nice dear hare, that was feeding among the cabbages. It was such a tame one that I do think I could have caught it, for it never ran away when we came to look at it; but William struck it

with the handle of his hoe, and now it lies on the ground, looking so bad that I was obliged to cry, and felt quite frightened. Do, Katie, come and see the poor thing!" And here my tender-hearted little brother, who was remarked for his benevolence and sensibility when a child, wept afresh.

During the commencement of this narration, a faint suspicion that this tame hare, as Tom called it, was no other than my pet rabbit, Whitefoot, glanced across my mind; and this idea became more decidedly impressed upon me as Tom proceeded to descant on the unusual tameness and gentleness of the supposed hare's demeanour. Without waiting for further confirmation of my fears, I hastily threw down my work, exclaiming, "Oh! I know that wicked William has killed my innocent rabbit, my dear Whitefoot;" and without waiting to give further explanation to my words, I hastened to the spot, followed by little Tom. On reaching the cabbage-bed, the first object that presented itself to my view, was my beloved Whitefoot, lying on the dewy ground, and struggling in the agonies of death. At this afflicting sight, my tears flowed fast and passionately; not so much at that minute for the actual loss of my rabbit, as from grief and terror at witnessing the lingering agonies of the poor dying little animal. I had heard of death, and read of it as something very awful, that must happen earlier or later to every living creature; but I had never before witnessed the painful strife incidental to parting life. I had seen a dead bird; but its stiff, motionless, and composed appearance, occasioned no feeling of terror to be excited in my mind; but here, for the first time, I saw its horrors realized; and

trembling and weeping from mingled emotions of fear and grief, I stood gazing on the poor little sufferer, while my brother, scarceless less agitated than myself, clung to me, and joined his tears and lamentations with my own. The young man who had been the unthinking cause of my distress, on hearing that the rabbit he had killed belonged to me, seemed very much vexed, and said: "Indeed, Miss, if I had known, or could have had a thought that the rabbit belonged to you, I would not have killed it for all the world."

"Dear Katie, is it your rabbit?" asked my brother, in some surprise: "how did you come by it? I wish you had showed the nice dear to me, and then I should have known it was not a hare; and William would not have killed it, for I should have told him it was sister Katie's rabbit."

I now saw my folly in having concealed the circumstance of my having a rabbit from my brothers and sisters. Had I not done so, in all probability the life of my little favourite had been preserved, and I should have been spared much uneasiness. I learned, however, by this day's experience, that the straightforward path is the easiest to keep, and the best to pursue; that undue secrecy and concealment are inconsistent with truth and honesty, and too often ends in shame, mortification, and disgrace. My dear mother took this opportunity of impressing this truth upon my mind, pointing out very clearly the evils to which such a line of conduct, if continued, will lead.

How valuable are the instructions of parents! How much sorrow and uneasiness would children be spared in after life, if they would, with meek and humble

hearts, hearken to the virtuous lessons that are inculcated by those whose wisdom has been earned through the experience of many years, and who, anxious for the welfare and happiness of their children, would willingly spare them some of the painful consequences arising from the commission of faults and follies incidental to their fallen nature. But how few of the many will be thus taught! Like the young king of Israel, Rehoboam the son of Solomon, they despise the advice and wisdom of the elders, and turn to the example and thoughtless follies of those of their own age.

Not very long after this disaster, my sisters and I agreed to purchase with our little savings three rabbits, which our bailiff's son offered us at the reasonable price of sixpence apiece. These rabbits we kept in boxes, covered over with boards, in the root-house; which boxes, though insecure, were the best accommodation we were able at that time to afford.

The commencement of our attempt at keeping rabbits was distinguished by many misfortunes, partly arising from inexperience as to the proper way of managing these animals, and partly from the want of proper conveniences.

Our doe Sapho's first litter died in consequence of our ill-timed curiosity, in taking the tender little creatures from the warm nest before they were quite a day old, in spite of the indignation of the doe, which she expressed by striking one of her hind feet with great violence against the bottom of the box. This unequivocal token of her displeasure we did not choose to regard, and the consequence was, she destroyed the whole litter, consisting of seven young ones.

This practice of disturbing the young family is very injurious, and the does will often kill their offspring in consequence of such interference. The most prudent plan is to avoid uncovering the nest, or even taking much notice of the mother, for some days, merely supplying her with food as she may require it, without staying to fondle or caress her, until the rabbits are seven or eight days old, when they begin to unclose their eyes, which, like many small animals of the furry tribe, are closed for eight or nine days after their birth. They have also by that time acquired a covering of soft and delicate fur, which before had been scarcely perceptible, the little rabbits presenting an unsightly and naked appearance, by no means pleasing to the eye of the beholder.

I scarcely know a prettier sight than a family of little rabbits, frisking and whisking about their mother, or demurely seated about her, nibbling the greens and tender herbage with which she is supplied. Perfect harmony and good will may be observed among these harmless creatures: no quarrelling nor fighting for food. Sometimes two little rabbits may be observed eating the same leaf, which they will share to the very last morsel. The stalks and stringy fibres of the leaves are rejected by the young ones: they usually select the more delicate and finer parts of the herb, or vegetable, for their repast.

The doe brings forth her young at the end of twenty-eight days, or a full lunar month. Previous to this event, she begins preparing a nest for the reception of her little family, in some remote corner of her box or hutch, making a deep hollow, or basin, among the straw, and selecting from the litter the choicest bits

of hay or straw she can find. These materials she collects into a sort of bundle, which she conveys to her nest in her mouth, stripping off the down from her breast and belly, to render the bed soft and warm, for the comfort of her helpless offspring.

Nature, ever bountiful to all creatures, has provided this animal with abundance of thick fur; and it is an interesting sight to behold how she divests herself of her natural covering, to ensure the welfare of her expected family. This love of offspring, which is so strongly implanted in the breasts of parents is particularly observable in brute animals. The rabbit, a creature noted, like the hare, for the timidity and gentleness of its habits and disposition, becomes fierce and vindictive during the early period of her attendence on her young; guarding with jealous and watchful care the entrance to her nest, and concealing it by every possible artifice she is mistress of, from the observation of intrusive eyes. As the little ones attain greater strength and size, she relaxes her vigilance, and ceases to resent the interference of strangers, and will permit them to be taken from her side, without expressing any of that displeasure which before characterized her manners.

The breeding and nursing does should be supplied with milky herbs and juicy vegetables. Sow-thistle, dandelion, lettuce, clover, and the like, are proper at this time. Green tares, which are frequently cultivated as green fodder for cattle, and which, being mixed with oats or rye, are much desired by rabbits, and form a very suitable provision for them, when they have young ones. A small proportion of dry food, such as bran, oats, hay, and the like, should be

allowed these animals. The bran, or oats, may be placed in red earthern pans, such as you place flower-pots in, and are known by the common name of *feeders*. They may be procured at any shop where the common red earthenware is sold, at the moderate rate of from one penny to three-halfpence apiece. Where rabbits have not the convenience of a regular hutch, with trough, &c., to it, I know of no better substitute than these red feeders. A small wooden box, or trough, may answer the same purpose; but being lighter, are more easily displaced by the rabbit, and the food is often wasted by being overturned among the litter of the box.

Besides the loss of Sapho's first and second litters, one of our rabbits died from being inadvertently given hemlock among the herbage. The body of the poor animal swelled to an amazing size, and it died in great agony, the skin turning of a livid colour directly after death, which indicated the existence of poison. After this accident, we were careful in examining the weeds we gathered, which were brought us by the servant boy, the loss of one of our rabbits being a great misfortune to little folk like us. But this was not the greatest of our troubles: other untoward circumstances happened, that nearly put an end to our keeping rabbits at all.

The boards we placed over the rabbit-boxes were either not sufficiently weighty, or too insecurely arranged, so that our rabbits would not unfrequently contrive, during the night, by strength and artifice combined, to raise, or displace the covering of their houses, and escape from their confinement; secreting themselves among the piles of wood, roots, and other

lumber, that occupied a division of the root-house, from whence they contrived to burrow their way out into the garden, where they did much mischief among the vegetable crops. These predatory excursions occasioned us much uneasiness and anxiety, especially as we knew how particular papa was at all times about his garden. The gardener had concealed the mischief done by my darling grey Minna, to a bed of Michaelmas cauliflowers; but one day, in spite of the care I had taken to confine her safely in her box, the unlucky creature jumped out, and found her way into the garden, close to the spot where papa was at work, cutting some currant trees. All her former evil deeds now were revealed by Lockwood the gardener; and papa highly incensed at the ravages committed by my poor favourite, Minna, sentenced her to immediate death. I was summoned to catch her, which was no very difficult task, for she was the tamest, most gentle animal of her species, and readily suffered her little sorrowful mistress to approach and secure her. But when I heard of the inevitable sentence decreed on my beloved rabbit, my grief was unbounded; and while I held her fast to my bosom, my tears fell fast over her soft grey head, which were rather increased than diminished, by the affectionate creature licking them from my cheeks, and endeavouring to win my attention by her mute caresses. Mamma and my elder sister, touched by my sorrow, and interested by the behaviour of the gentle animal I held in my arms, united in entreating papa to reverse his decree in favour of grey Minna.

For my own part, I was too much distressed to be able to speak; but my silently-imploring looks, and

fast-falling tears, at length moved my dear father's pity; and he bade me restore grey Minna to her box, and be more careful, for the future, in securing her.

The very next day, we observed papa very deeply engaged with his compass and scale; and in a few hours he called Jane and me to look at a plan he had been drawing for a regular set of rabbit-hutches, to be erected in the root-house, for the better accommodation of our stock, which had been increased to four does and a buck, by my brothers having purchased two half-grown rabbits. You may easily conceive the feelings of delight with which we watched the progress of the building, which was carried on in a small outhouse adjoining the granary, fitted up as a sort of work-shop, in which papa kept a variety of tools and materials for carpentering-work. Instead of following our usual sports, or sources of amusement, the moment we were released from the study, with one accord, my sisters Jane and Susanna, with my brothers and myself, hastened to the workshop, to visit papa and his workmen; pleased enough, if we found employment in holding a hammer or chisel, or handing a nail or screw. The rabbit-house consisted of six complete hutches, with outer and inner rooms for each rabbit. The outer room was about two feet and a half square, communicating with the inner chamber or sleeping place by means of an open arch, after the manner of the holes in a pigeon-locker, only large enough to allow of the free egress and regress of the animal: this sleeping berth had an outer door, which was kept fastened, excepting when we had occasion to put in fresh litter; the outer chamber was furnished with a

door, strongly wired in front, and with a nice little trough, which was kept shut by means of a peg and string.

When our rabbit-house was finished, it was fixed up at one end of the root-house. The space below was closely paled in with a moveable gate or lift, as some people call it; and this place we termed the park, which served for the free range of our little rabbits when taken off the mother; and a pretty sight it was to see a dozen or two of these innocent little creatures skipping about or standing on their hind legs, and begging for the green herbs and vegetables, as frolicsome and free as though they were abroad in the fields or warrens.

Besides the hutches for the breeding does, we had two nice large boxes fixed up, and wired in front, with sliding doors and troughs, one for the buck and the other as a fatting-house; nothing could be more comfortably or conveniently arranged than our rabbit-house was, and the only restriction laid upon us by papa was this—that we should be particularly careful in fastening all our doors and troughs, that the rabbits might not again inconvenience him by getting into the garden, and destroying his vegetables and flowers.

Our rabbits throve so well in their new hutches, that in the course of a few months the park was filled with black, white, grey, and fawn-coloured rabbits.

Of a fine warm spring day my sisters and I used to treat our respective families with a gambol in the meadow, conveying them in baskets or in our laps to a warm sunny slope, enamelled with daisies, cowslips, buttercups, primroses, and that gay and beautiful

little meadow-flower that is commonly called trefoil. There, seated on the ground so as to form a guard over our pets to prevent them from wandering too far, we permitted them to crop the flowery herbage, and watched their frolicsome gambols among the daises and buttercups with infinite delight.

If any one of the little tenants strayed beyond the limits allotted for their sports, and became at all refractory, we punished the rebel by imprisoning him in the basket till he became more manageable. One of these little creatures contrived to elude our watchful care, and charmed with the liberty he had been permitted as a favour to enjoy, ran off to the neighbouring plantation, and we never again beheld him.

On the whole, our rabbits' lives were as happy as creatures under a state of confinement could possibly be; none of our rabbits ever suffered from neglect or unkindness: if one of us was sick or from home, the other supplied her place, and fed her rabbits with the same attentiveness as if they had been their own. As to Susanna and I, we agreed to go partners in our rabbits, which plan answered the interest of both parties, and as we never disagreed or quarrelled when children, this partnership proved a very comfortable arrangement.

For the first year after the hutches were built, our rabbits throve exceedingly; some few we lost during the winter, from the excessive coldness of the season, which was unusually inclement, and some from want of proper management with regard to the quality of their food; but in spite of these accidents, our stock increased so abundantly, that we had twenty young ones of different sizes and colours, running about in

the park, five half-grown ones in the fatting-house, and several infant families with the does; when a circumstance most disastrous in its consequences occurred, which reduced our number to a very few individuals, and occasioned us the greatest possible anguish and distress of mind.

Early one morning, as we suppose, our three cats, Pinch, Patch, and Patty, entered the rabbit-house through one of the open-arched windows, the shutters of which had been inadvertently left unbolted; and when we came as usual at seven o'clock, to feed our rabbits, a most horrible scene of slaughter met our eyes. On the ground in the park lay the mangled bodies of no less than fourteen of our young rabbits; five more were missing, that had been either dragged away, or had made their escape from the fangs of these murderous cats; one poor, terrified, half-dying little creature alone remained alive, out of twenty-five half-grown rabbits. Nor was this all: one of our best breeding does had been so torn and mangled by the claws of one of the cats, in attempting to draw her through the wires, which she had forced apart, that the poor thing died the following day, leaving a helpless litter of nine little ones, unable to shift for themselves.

Our indignation against the authors of this mischief, you may naturally suppose, was very great; but while we were lamenting over the loss of our pretty rabbits, and debating how best to punish the delinquents, the gardener came to inform us he had just drowned two of the offenders, but white Patty had made her escape. Now I must tell you that we were very fond of the cats: white Patty especially was a great favourite, she

was my sister Jane's protégée, and in spite of the mischief she had done, we could not bear the thought of depriving her of life, particularly when we came to reflect that cats are beasts of prey, and that in killing our rabbits, they had only been following their natural instinct. Lockwood, who was influenced by no such scruples, strongly recommended us to have white Patty put to death; assuring us, after having once found the way to our rabbit-house, we should never be able to keep any of these creatures free from her depredations.

A more merciful plan at length suggested itself, and we agreed to give white Patty away, if we could find any one who would accept her. We were not long in finding a mistress for our cat. An old lady in the neighbourhood, whose cat establishment was very numerous, agreed to receive our poor puss as an additional member of her feline family; and as she resided at some little distance from us, in a neighbouring village, there was no fear of our rabbits again being molested by her.

This accident had reduced our stock nearly to the original number, and as it happened towards the close of the summer, they did not increase again till the winter.

The following spring, my sisters, Agnes and Sarah, bought two young rabbits, of a new and most beautiful species. The coats of these animals were of a snowy whiteness, the texture of the fur resembling the softest silk, and so thick and long, that it descended to the ground; their ears were remarkably long and soft; the eyes, which were red, glowed in the dark like carbuncles; but besides their exquisite beauty and

superior size, which was more than double that of the common breed, they possessed far more intelligence, and were much more engaging in their dispositions and manners than the other rabbits.

They evinced the most tender attachment for the persons of their mistresses, springing into their laps, caressing their hands, and licking their faces, whenever they approached to fondle them; nor did they ever attempt to escape from their boxes, as our rabbits had formerly done, but seemed perfectly contented with their situation and treatment.

By degrees we diminished the old stock, and increased that of the foreign breed, which was far more valuable in every respect; they were the admiration of every one that saw them, and we were very proud of our beautiful pets. But we were not permitted long to enjoy the possession of these creatures, for one night some dishonest person broke into the rabbit-house, and took thence every one of our rabbits, not leaving so much as a single one to console us for the loss of the others. This last misfortune put an end entirely to our rabbit keeping; we were unable to renew our stock, and the hutches remained empty several years; at last they fell quite into decay, and were taken down.

A few hints on the best method of managing these animals may not prove altogether useless.

The rabbit being, by nature, a very strong-scented animal, requires, when in a domestic state, to be kept particularly clean and dry; and unless this important point be duly attended to, these creatures will not thrive. To further this, the bottom of the hutch or box should have several holes drilled in it, that the

moisture from the animal may drain speedily off. Rabbits that are not kept clean are liable to dropsy and the rot, beside a species of madness, which often ends in death. These diseases may, in a great measure, be avoided, by proper management as to their food and litter.

Young persons who keep rabbits, especially boys, if they cannot command a servant to perform these necessary offices for their rabbits, should not be above attending to them themselves, and this may be done without dirtying or soiling their hands or clothes, if proper means be resorted to. A short-handled hoe to scrape the bottom of the hutch with, a wisp of straw, or an old mop fastened to the end of a stick, about two feet in length, to rub the places dry, and an old box, placed under the hutch to receive the dirty litter, will prevent any unpleasant consequences: these conveniences are easily procured with little expense, and will save much trouble. A little management on the part of young people will overcome any difficulty in making these arrangements; and it is a good thing to call forth the expediency of their minds even in trifles, as it teaches them to think and act for themselves as they advance in life.

My father would never tell us anything we wanted to know without first endeavouring to make us exercise our own reason. If we said, "Do, dear papa, tell us how this or that thing is to be done, or what we are to do under such circumstances, or how such a thing is begun or finished," he would reply: "Go and think awhile, or try and find it out by yourselves; you have a head, you have hands to obey that head, but if you are really not sufficiently clever to discover the right

way, I will tell you; but then I desire you to bear in mind, the merit of the performance will be mine, and not your own." By this means he taught us the value and usefulness of knowledge, and gave us a motive for exerting our own ingenuity and abilities.

But to return to my directions: after having thoroughly cleared away the refuse litter, which may then be removed to any convenient heap, or to the farm-yard, a little dry sand or sawdust should be sifted over the floor of the hutch, as it helps to absorb the wet and moisture. The inner berth should be duly supplied with fresh hay or straw, and should be cleaned out at least twice a week, the outer place every other day. A very few minutes will be sufficient to perform this necessary office; and those children who love their rabbits, will think little of devoting so small a portion of time to their service.

With regard to food, I have always found the best way was to feed them regularly three or four times a day, giving them a sufficiency, but not too much at a time, as the food is apt to be wasted, these animals taking a great disgust to victuals that has been long exposed to the air of the hutches. Green herbs or vegetables should be gathered some hours before they are given to the rabbits, unless it be in warm weather, when the dew is quickly dried from the leaves. We generally managed to have a day or two's stock in hand, that they might be sufficiently dry, as over moisture occasions them to die of the rot. A portion of dry food, such as hay, which they are fond of, dry clover, barley, straw, chopped carrots, Sweedish turnips, bran and oats, should be given them with their greens, to counteract the abundant moisture con-

tained in their juices ; grains they will eat, and bread, but this latter article I consider too precious to bestow upon animals, when so many poor families are in want of it.

CHAPTER XIII.

When my sister Jane and I were quite little girls, we accompanied our eldest sister to the house of a neighbouring farmer, to pay for some fowls mamma had ordered of the farmer's wife. After Mrs. Mills had been paid, she asked my sister if she would like to visit the poultry yard, which was a nice green enclosure, well furnished with various sorts of domestic fowls, such as turkeys, geese, ducks, and guinea-fowls, beside cocks and hens, and chickens of all sorts and sizes. The object, however, which more particularly attracted our attention, was a white pigeon, of uncommon size and beauty, belonging to that species distinguished by pigeon-fanciers by the name of powters, from the extreme fulness of the breast and crop, which they possess the power of inflating at will to a great size.

The plumage was of a snowy whiteness ; his legs and feet were of a bright red colour, and his head was garnished with a sort of crest. Besides his superior beauty, he was so tame that he readily ate out of the hand of his mistress, flew to her shoulder, or into the basket of dress corn she held in her hand.

We were all so delighted with his gentleness, that we had no eyes for any other object present; and

great was our indignation on hearing Mrs. Mills avow her intention of killing this amiable creature, to send to market the following week, on the plea that he was a very profitless creature, consuming a great deal of food, without paying her in any way for his keep.

It seemed strange to us that any one could be so hard-hearted as to take away the life of so gentle and engaging a creature, merely on account of the trifling expense of the few handfuls of refuse corn he daily consumed; and eager to rescue the poor bird from so disastrous a fate, we asked what sum she would take as the price of the white pigeon. On learning that one shilling would perfectly satisfy her demands, Eliza immediately gave her the money, and very generously presented Snowball (for such we named him) to my sister Jane, promising at the same time to purchase a dove as soon as she could meet with one, which she would bestow upon me.

A shoe-maker's son in our village hearing we wanted to make such a purchase, not many days after this offered us a small black dove that had lost her mate; this dove Eliza bought, and gave to me. She was so shy and solitary in her habits, that we called her the Widow.

Mrs. Mills had advised us to keep Snowball shut up for a short time, till he should have grown familiar with his new residence, or he would certainly take the first opportunity that offered to fly home; these birds possessing, in common with many others, a strong attachment to the spot where they have been accustomed to live. Love of place seems inherent in some creatures, more particularly so than in others.

It is stronger in the cat than in the dog, and is thus distinguished :—in the dog it is attachment to *person*, in the cat to *place;* the dog willingly follows his master in all his travels and changes of situation ; the cat returns to her home, though it be deserted by her mistress, and readily attaches herself to the new tenant. The love of place in the carrier-pigeon has been too often remarked and made serviceable to man, to require dwelling on here. The swallow, and various other of the migratory birds, are considered to possess the same instinct, which is so strong as to guide them across pathless seas and vast tracts of land, to the deserted home beneath the straw-built shed, or the favourite chimney-top, in which they nursed their former brood.

But to return to my narrative, lest I tire you with my digression. The following spring a gentleman, to whom my sister Jane had shewn her darling pet, very kindly sent her a handsome dove, with a black spotted head and dark coverts to her wings, as a mate for Snowball ; and not very long afterwards we had the joyful satisfaction of beholding a nice white egg, in a distant corner of the coop among the straw.

This egg was an object of great interest to us, and, like silly children who knew no better, we went twenty times a day to visit it, taking it from the nest, examining it, and carrying it about in our hands, to show it to every person who would be troubled with looking on it, to the great indignation of Snowball, who expressed his displeasure at our proceeding by fiercely buffeting us with his strong white wing, pecking our hands, and strutting angrily about the coop, cooing, and bowing his head in a stately manner, evidently intending to

reprove us for the unwarrantable freedom we were guilty of, in taking away his valuable egg. And here I must notice that birds and beasts are very jealous over their young, and display great uneasiness if interfered with in any possible way during the early stage of their attendance on their little families. The latter will often destroy their little ones, and birds forsake their nests; but with these circumstances we were at first unacquainted. Experience, however, soon taught us wisdom. In one of our excursions to visit our eggs, we had the misfortune to let one fall from our hands. It was broken into shivers; and thus perished our first hope of an increase to our stock: the other solitary egg proved to be addled, for the pigeons kicked it out of the nest.

Unacquainted with this peculiarity in our favourites, we loudly exclaimed against their unkind and unnatural conduct: and though we replaced the deserted egg every day, every day we found it had been treated with the same contempt. Papa, however, explained the reason, and breaking the egg, proved to us the wisdom of the birds in rejecting it: advising us at the same time not to interfere with the nest of the dove, who was preparing to set again. In due time our pigeons hatched a pair of ugly little birds, not much handsomer than toads, with great beaks, and bodies scantily covered, not with feathers, but long, dirty, yellowish hair; and to add to their unsightly appearance their eyes were closed. We were shocked at the hideous appearance of the young brood, which we had fancied would be at least as pretty as little chickens or ducklings. The old birds were less fastidious, and seemed to regard them with infinite satisfaction,

carefully brooding over them by turns, the cock taking his equal share of nursing with the hen. And now the whole tenderness and affection of these creatures seemed centered in their offspring, their sole employment that of brooding over them, and supplying them with food and drink, which they brought in their bills. Snowball and his gentle partner had been kept prisoners till this period in the coop, but mamma advised us to leave the sliding bar open, that they might have liberty to go abroad, aud procure food for themselves and their young. At first we were fearful lest Snowball should be tempted to make use of his liberty and depart, especially when we beheld him take a sweeping circuit round the fields; but we were little acquainted with the devoted attachment and parental instinct that distinguishes the feathered part of the creation: an attachment so strong, that it appears for a season to alter the very nature and general habits of the bird, overcoming their natural timidity, and rendering those creatures that were before remarked for the gentleness, reserve, and shyness of their habits, bold, fierce, and subtle. These traits are remarkable in the common domastic fowls. The turkey, goose, and hen, become almost formidable; jealous, wrathful, and vindictive, they guard their young broods from all real or fancied wants, they are abstemious to a degree, abstaining from food, that their young may be more fully satisfied, and with unwearied constancy pass their time in searching for nutriment, protecting their helpless progeny from the approach of any foes that might molest them, calling them together, and shielding them beneath the covert of their wings, affording a beautiful pattern of parental care and parental love.

Children may here observe a picture of that self-devotedness, that unwearied tenderness, that was lavished on them during their years of helpless infancy. Like the careful hen, or tender dove, their parent watched over and guarded them from danger, supplying all their infant wants and childish wishes. The solicitude of the parent bird is confined to the safety of her young, and to the supply of their animal wants; and this care ceases as soon as their progeny are able to shift for themselves: but that of the human race begins with the moment of the infant's birth, and ceases not till death; it extends not only to the bodily necessities of the child, but to that of his soul. Let us follow the mother into some of her maternal duties.

With what unwearied tenderness does she watch over the cradle of her babe! How kindly does she sooth his fretful wailing, and hush it to repose on her bosom! His smiles fill her eyes with tears of gladness, her breast with rapture, which none but a mother's heart can experience. If sick she redoubles her care; his cries or painful moaning fill her breast with apprehension; his restless tossing calls forth all her anxiety; depriving herself of rest and slumber, she sits beside his feverish couch, hushes him in her arms, and bathes his unconscious face with streaming tears. Nor does her solicitude end with the period of helpless infancy: with painful forebodings she marks the unfolding passions in the mind of her child, and while with anxious care she strives to implant the seeds of virtue and piety in his breast, and to root out the evil weeds that the enemy of man has sown within his heart, she trembles for his eternal welfare; her prayers are poured

forth night and morning to the throne of grace in behalf of the beloved object of her solicitude. How often is her bosom wrung with anguish at the acts of disobedience, of neglect, and unkindness, on the part of that erring, but dear child! Through all the changing scenes of life the child is still the dearest object of her care. She follows him through his giddy course in this world: if virtuous and prosperous, with joy unspeakable; if otherwise, who shall describe her anguish, her tears, her deep regrets! And though too disregarded and forgotten in the moments of gaiety and pleasure, yet when shame and disgrace overwhelm, when sickness and sorrow are at hand, and all have forsaken, the mother alone is found with unwearied affection watching beside the restless pillow, and speaking peace and hope to the unworthy, but still dear object of her love. Who, dear reader, can fully unfold to you all a mother's anxiety, a mother's tender affection, from the earliest dawn of infancy to maturity of years—from the cradle to the grave?

The little pigeons were a month in acquiring their full plumage, and presented a most shabby appearance while their feathers were growing. They were remarkably slow in learning to pick, would hasten with outstretched wings to their parents, clamouring for food, even after they were able to feed themselves. At length the old ones refused to attend to their cries, relaxing by degrees their former kindness and attention, and finally began to buffet and huff them away whenever they ventured to approach them. At length they began preparing a nest for the reception of a new family, which circumstance made the removal of the young pigeons a matter of necessity; and they, in their turns,

were accommodated with a coop. The hen-coops, however, were wanted for the reception of newly-hatched broods of chickens: and the dairy-maid, who had the care of the poultry, grumbled sadly at the inconvenience occasioned by the appropriation of the coops, and even hinted her intention of turning out our young pigeons, to seek shelter where they could find it. In this dilemma we applied to papa, who taking compassion on our houseless favourites, signified his intention of having a locker made for them. This good fortune exceeded our most sanguine hopes, and we watched with inexpressible interest the plan which papa drew with rule and compass, for the better assistance of the carpenter, who was immediately set to work on the locker. At length the building was completed, white-washed within side, and fixed beneath the eaves of the barn.

You may imagine the delight with which we contemplated the removal of our pigeons to their new and commodious habitation; but my share of pleasure was greatly damped by the melancholy death of my only pigeon, the black dove. This harmless creature had the ill-fortune to venture too near the trough of an ill-natured old sow, to pick up a few of the refuse peas she had scattered on the ground; the savage beast opened her great mouth, and snapped off my poor dove's head. In a transport of indignation I ran to papa, and having informed him of the circumstance, demanded the death of the offending animal. To this, of course, he would by no means consent; and reproved me for indulging in revengeful feelings against a creature that was incapable of hearkening to reason, or understanding the nature of the fault she had committed.

My governess said all she could to console me for the loss of my murdered dove: but I continued very sorrowful, especially when I beheld, from the window of our school-room, my sister Jane's two pair of pigeons sunning themselves on the outside of the locker, and remembered I had now no interest or share in its inhabitants.

Have any of my young readers ever been in a like predicament? If they have, possibly they may feel some sympathy in my affliction, though I doubt much if any one of my little friends ever adopted so foolish a means of consolation for the death of a favourite, as I did. I had been set by my governess to learn by heart Gray's ode on the death of a favourite tortoise-shell cat, which was drowned in a tub of gold fishes, and I resolved to dissipate my grief by writing an elegy on the death of my pigeon.

On making known this desire to my governess, she could scarcely forbear smiling, thinking, no doubt, I had greatly miscalculated my poetical powers, but assured me I had her full and free consent to execute my design, proffering me at the same time a sheet of paper, with pen and ink, to commence my first essay in rhyme. Now I was, as I before informed you, but a very little girl; and though I could write in a copy-book large text and round hand, I had no idea of writing small enough for copying verses. I felt somewhat embarrassed at my inability to write down my poetical effusions, and after some hesitation, returned the materials to my governess, preferring a petition, that *she* would write the verses as I composed them. This she consented to do with great good-humour; and, folding my arms, I stood before her with an air of

profound gravity. At length I began with the following long line, which was duly written down at the top of a fine sheet of gilt paper:

> I had a single pigeon, she was a widowed dove.

My governess sat patiently waiting, pen in hand, for the next line; but, alas! the next line never presented itself to my imagination. I looked from the fire-place to the ceiling, from the ceiling to the window, from the window to the little book-case in the corner of the room, as if to gather some inspiring thought, but in vain. I fixed and refixed the hem of my pinafore, and counted and recounted my fingers over and over again. The suppressed mirthfulness of my five sisters and my little brothers, with the laconic, "Well, child, go on," of my governess, at length put to flight all my elegiac stanzas, and, overwhelmed with blushes and mortification, I retreated to my little stool, and was obliged to confess I had overrated my abilities, which certainly never belonged to the rhyming order. Thus ended my first and last attempt at writing verses. This circumstance afforded considerable amusement to my sisters; and though greatly mortified at the time, I soon learned to laugh at my foolish vanity as much as they did. However, I must tell you, my grief for the loss of my dove, and chagrin for the failure of my elegy, were speedily removed by my sister Jane kindly presenting me the pair of young pigeons which Snowball and his mate had hatched a few days previous to the completion of the locker, to which they were introduced as soon as it was considered prudent to remove them.

Our pigeons throve so well in the course of the ensuing year, that the locker was fully occupied by their hopeful progeny. They became so tame, that at the sound of our voices they would fly eagerly towards us, wheeling over our heads, and alighting on the ground at our feet, to pick the dress corn we scattered for them. Some, more familiar than the rest, would fly to our shoulders, or even alight upon our hands, and help themselves freely from our laps or baskets. Snowball and her gentle partner held rather a higher place in our esteem than any of the young ones; whether from old attachment, or because they were more engaging in their ways, I cannot exactly tell, but certainly they were our favourites.

The usual food of our pigeons was peas, tares and wheat; boiled potatoes, cheese-curd, and other scraps and crumbs they shared in common with the domestic fowls. During our walks, my sister Jane and I discovered a species of wild tare, which the pigeons eagerly ate; also the seed of the milk-vetch, the most beautiful flower of the species of *vicia*. It grows wild in the hedges, rearing its bright blue spikes of flowers from among the bushes and underwood of our hedgerows and headlands. The pods of these plants, when ripe, we collected and shelled, keeping the seed in bags for a winter store. Papa allowed us a certain proportion of refuse corn for the subsistence of our pigeons, which was regularly measured out, and deliered to us every week, with strict injunctions not to waste any part of it. Such a quantity was to last such a time, and in return for this indulgence, we were to keep the thrift-border in the front garden duly clipped and trimmed; and as the provision of our beloved

pigeons depended on our punctuality and attention to this point, you may be sure we never neglected to cut away the decayed flowers when necessary.

Our stock of pigeons increased at length so much, that the locker was found insufficient to contain them ; and our means of supplying them with food not increasing in proportion to the demand for it, papa insisted on the number being reduced to five pair, which was all the locker could conveniently accommodate. The idea of having any of our favourites killed was very grievous to us, and we complained much of the cruelty of such a proceeding ; but papa, who was much older and wiser than we were, proved to us, that killing some of the supernumerary pairs became an act of necessity rather than cruelty ; being, in point of actual cruelty, no worse than taking the life of a chicken, or duck, or any other animal intended for food. But he advised us not to make pets of those pigeons that were not to be preserved as breeders, as he had a great objection to killing any creature that had been regarded by us as a peculiar favourite. In addition to these arguments, he assured us it was neither right nor just to keep any creature, unless we had a sufficiency of food for their maintenance ; as they must either suffer greatly from hunger, or become a nuisance to our neighbours by trespassing on their fields.

For many years our pigeons continued a source both of amusement and profit, but by degrees our stock diminished : the old ones died, and the only remaining pair at last forsook the locker.

The pigeon-locker still remains a fixture, beneath the eaves of the barn, but its former tenants have all

passed away. Not a single plaintive note is heard from their old, familiar dwelling: the sound of their strong wings, cleaving the air in their rapid flight, no longer meets our ears. Not a single solitary bird remains. They are all gone; but the locker is not entirely untenanted. Various have been its inhabitants; and some of so singularly opposite a character to each other, that I cannot refrain offering my readers a slight sketch of the creatures that have at different periods taken possession of the forsaken mansion.

The first summer after the pigeons had abandoned the locker, it remained quite deserted; but in the July of the ensuing year, Fanny, the old Cypress cat, was observed frequently ascending towards the roof of the barn, by means of the ladder that was prefixed to the hen-roost adjoining; and as she usually remained absent a considerable length of time, and was heard to repeat, at intervals, that short, inward cry, which is peculiar to that species of animals when calling their young, it was concluded that old Fanny had kittens secreted somewhere near the roof of the barn. For some time she contrived to elude our vigilance; but one day, while retracing her stealthy progress along the mossy roof of the barn, our ears were saluted by tender mewings, which appeared to proceed from the pigeon-locker, where, shortly afterwards, two innocent round faces were seen peeping out from the holes of the upper tier. Old Fanny had chosen this lofty retreat for the nursery of her infant progeny, from its apparent security; and here she had reared two of the prettiest, fattest, and most lively kittens that ever paced a parlour hearth. Not satisfied with a distant view of them, my sisters and I induced the footman

to place a ladder against the barn, and bring down the kittens ; but scarcely had he reached the locker, than he descended the ladder again, in great haste, and with evident trepidation, informing us the centre of the pigeon-locker was occupied by a nest of hornets, and that he dared not approach near enough to reach the kittens, lest he should disturb these formidable creatures. The house and garden had been infested by hornets for some time past, to our great annoyance, and it was judged advisable to have the colony of these rapacious insects destroyed as quickly as possible. Accordingly, when night had closed in, and the inhabitants of the nest were in a state of quiet repose, one of the men-servants ascended the ladder, and plastered up the entrance, by which they gained egress and regress to the nest, with mortar, leaving only space enough for the introduction of a tobacco-pipe, through which the fumes of brimstone were conveyed into the interior, by which means the hornets were stupified, and in that state easily destroyed.

We had given directions for the preservation of the nest, but I regret to say only a small specimen of this curious piece of workmanship was preserved entire. This was composed of a whitey-brown substance, almost resembling in texture thin parchment, or the cloth manufactured by the natives of the Southern island, from the inner bark of the paper mulberry-tree. In building their nests, the hornet makes use of the same materials as the common wasp, viz. splinters of decayed wood sawn from the interior of old trees, posts, rafters of out-buildings, and other rotten timbers suitable for their use. These pieces are divided into minute fragments, by means of the strong forceps

with which nature has provided the front of this insect's head. The wood, thus prepared, is moistened with glue, and kneaded with the feet and head into a paste, and then formed into regular compartments, which, though not composed with the nicety and skill with which the wasp or the bee build their cells, is well worthy of our attention and adoration.

The hornet is one of the most formidable of all our British insects. Its food consists chiefly of flesh; and though it destroys our autumnal fruits, their sweet juices are less regarded than the prey it captures among the fruit-tress. Though belonging to the same species, the hornet is a most decided enemy to the wasp; eagerly pursuing it, and, when caught, tearing off the head and scaly covering that envelops this insect, sucking its juices, and casting away the trunk when deprived of its moisture. Flies also and bees it makes its prey. Nor are its attacks confined to the remote branches of the species. These creatures will also destroy one another in their displeasure; for they are remarkable for their quarrelsome disposition. This seems in some measure to account for the comparative scarcity of these insect. Their usual haunts are the branches or hollow trunks of decayed trees; especially the ash, the wood of which appears to be particularly favourable for the formation of their nest or comb.

The next tenants the pigeon-locker received were a colony of sparrows, a pair of swallows, and one solitary starling, which had by some mischance been separated from the rest of the flock: and there he sat, day by day, week after week, uttering the most melancholy and pitiful complainings, as if intended to

reproach his companions for having thus heartlessly abandoned him to solitude. This bird is naturally of so social a disposition, that it wil lassociate with rooks and crows and pigeons, rather than be alone· Even in their gregarious state, a flock of starlings may be seen congregated with larks, all flying together ; but if any cause for alarm arises, they instantly separate each to their respective tribe. If any of these birds be separated by any accidental cause from its fellows, it expresses its grief by the most woful lamentations. Thus it was with our starling. It would sit on the top of the pigeon-locker, moping all day long. Sometimes it would join the sparrows, and fly with them from the pigeon-locker to the roof of the barn, or to the house-top, or come down with them to share the spoils of the court, or rick-yard; but though accompanying them in their flight, it seemed perfectly distinct from this noisy, loquacious, busy, bustling crew—it was still alone.

I missed the starling one morning from its usual place of resort, and as it never afterwards appeared among its companions, the sparrows, I concluded it either left the place to seek one more congenial to its habits, or pined itself to death in the locker.

As to the swallows, they nursed up two broods of little ones, and migrated with the rest of their fellows just after Michaelmas-day, leaving their comfortable habitation to the mercy of the sparrows, their neighbours, who immediately took possession of the empty tenement, in which they established their winter-quarters; and there they sheltered themselves in warm nests of straw, hay, and feathers, during the cold weather; and when the swallows returned the

following spring, to take possession of their former dwelling, they could by no means induce these saucy birds to vacate the nest, and relinquish the right which possession had given them; and the sparrows have continued to breed and build, year after year, and will do so, no doubt, as long as the locker continues to afford them so comfortable a retreat.

Such is the history of the pigeon-locker and its various inhabitants, which reminds me somewhat of the old tree in the nursery-fable, in which lived the old sow, the cat, and the raven; a story with which, doubtlessly, all my young readers are well acquainted, and have listened to with as much interest as, when a child of three years old, I used to do, while standing at mamma's knee, or seated beside my little sister Susanna, on the carpet at her feet, a happy and delighted child.

CHAPTER XIV.

A CAGED bird has always been an object of compassion in my eyes; and I cannot regard one of these innocent creatures, shut out from the enjoyment of that freedom which nature has afforded him such ample means of exercising, to its fullest extent, without feelings of regret. Their blithest songs, when under the confinement of a cage, to my partial ear, seem to breathe only the mournful language of complaint, and to want that joyous melody of tone that distinguishes the free denizens of the fields and groves, as they wing their flight from tree to tree, as if rejoicing in their liberty.

I have seen a poor captive thrush, in a wicker cage, hung over a cottage door in our village, beat its poor wings against its bars, and thrust its head through every aperture of its prison-house, in the vain hope of being able to effect its escape, and join its distant companions, whose jocund voices met his ear from the neighbouring gardens, and to which he answered in tones of loud and passionate complaining, as if he would make known to them his sad condition. Sometimes I have been quite moved, half tempted to open his wicker door, and set him free, that he might fly back to his fields and his woods, and enjoy that liberty, for the loss of which he moaned so plaintively; and I was restrained only by the consciousness, that under no consideration is it proper to invade another's right. For my own part, I would at any time rather purchase the enfranchisement of a bird, than detain him in captivity. I should never forget the uneasiness I endured when a little girl, on account of some young robins, which I took from their nest, with the intention of bringing them up by hand. I well remember the day I found the robin's nest. I had been unusually diligent in learning my lesson, and performing my tasks of work that day, which I completed much sooner than my sisters, and so much to mamma's satisfaction, that she allowed me to go out and play, or amuse myself in the garden.

The sun shone warm and bright. It was spring time, and every object around seemed to speak a language of universal joy. The breeze was loaded with sweets from the garden and meadows; thousands of gauzy-winged insects were skimming the air, or murmuring among the flowers, and birds were singing on

every bush. Without waiting for my sisters to join me, I determined to take a stroll by myself in the meadow, which communicated with the garden by means of a little bridge and a wicket gate. With light and joyous steps, a mind free from care, and alive only to the consciousness of unrestrained liberty, and the enjoyment of the unclouded sunshine and balmy breeze that played over my cheek, and invigorated my whole frame, I wandered forth into the fields, filling my lap with the flowers that I stopped to cull at every step. I believe I was as happy that morning as anything could be ; not less than the gay butterflies that flew past me, or the busy murmuring bees among the flowers, the birds that carolled so gaily in the hedges, or winged their flight towards their respective nestlings, or the family of young lambs that occupied the rising slope at the further end of the field, down which they chaced each other with untamed glee, realizing the natural description of "Lambs at play," given by a native poet in his "Farmer's Boy," which for sweet simplicity and natural colouring has been deservedly admired.

I had heard the gardener mention having seen somewhere, in a little pasture adjoining the meadow, that rare and curious flower, the bee orchis, which is so called from the singular resemblance its blossoms bear when expanded to the small humble bee. So I thought I would go and seek this curious flower, and plant it in my own little garden. I did not know, that of all plants the orchis is one of the most difficult to remove, as its roots strike very deeply into the earth, and the slightest injury of any of its fibres prevents its growth; and that the time of its flowering is the worst of all in

which to remove it, as it never survives another year. I spent nearly an hour in looking for the bee orchis to no purpose: but stooping to pluck some remarkably fine blue-bells, I discovered, just within the bank of an old dry mossy ditch, a robin's nest, in which were five pretty speckled birds, full fledged. Without pausing to reflect on the impossibility of providing suitable nourishment for these little birds, I resolved to make myself mistress of them, "They shall be my tame robins!" I said exultingly to myself, as I deposited them, one by one, in my pinafore, and hastened homeward, rejoicing in my good fortune, as I then thought it, and eager to display my prize to my sisters.

As I opened the garden wicket, I was accosted by the gardener's son, Jonathan, who asked me if I had been gathering flowers. I briefly told him of my capture of the little robins; but instead of congratulating me, he earnestly implored me to carry the young birds back again to the nest, assuring me, that to take a robin's or wren's, or a swallow's nest, was a very wicked thing, and some misfortune was sure to happen to those that did. I told him I did not mean to hurt or kill the young robins, but to feed and cherish them, till they grew fine birds, and were as tame and handsome as the garden robins who sang so prettily; but Jonathan only shook his head, and said, "Ah, Miss Kate, you will never have any luck, depend upon it, till you take them back to the old ones." I was incredulous, and obstinately bent on trying to rear the young birds; so I left Jonathan to indulge his old-fashioned notions, and ran home as fast as I could.

Now I must tell you, that I was totally unacquainted

with the nature of these birds: and was not at that time aware that their chief food, especially when young, consisted of worms, caterpillars, and a variety of other insects.

I brought them fruit, corn, and crumbs of bread, and whatever I thought likely to tempt them to eat; but though they were fine birds, and quite fledged, they seemed to have no notion of pecking he food I scattered before them; or they required nourishment of a different nature to that which I offered them: be it as it may, they obstinately refused all my invitations to eat or drink; and with feelings of great uneasiness I perceived first one, then another of the members of my adopted family, begin to flag. Before night came, two out of the five were in a dying condition, and a third sat at the bottom of the basket in which I had placed it, with its wings drooping, its feathers ruffled, and its eyes dim and filmy. It was too late to replace the robins that night; but I began to think I had better have followed the advice of the gardener's son. I regarded the dying robins with eyes swimming with tears, and went to bed with the determination of restoring the remaining ones to their nest as soon as possible; but, alas! when I hastened to look at my poor little captives, I found only one out of the five remained alive. He was yet lively and strong, and possibly had been induced by hunger to pick a few of the crumbs with which I had so profusely supplied the basket previous to retiring to rest. Without further hesitation, I resolved on carrying the poor little bird back to his former happy home in the mossy bank, nothing doubting but that his parents would gladly receive their lost, and no doubt, lamented nestling.

With this determination I tied on my bonnet, and carefully depositing the poor little robin in my bosom, I took my way through the shaded avenue to the meadow, through which my nearest path lay, to gain the little pasture where the robin's nest was situated. But scarcely had I reached the white gate that led to the meadow, when I was alarmed by the noisy outcries of the geese and a great white gander. These ill-natured creatures all ran forward at my approach, flapping their wings and stretching out their long necks, screaming and hissing like so many serpents.

I must confess, at that time I was a sad cowardly child, and never had mustered courage sufficient to pass these geese, when unprotected by the presence of the nurse-maid or Jonathan the gardener's son; instead, therefore, of boldly turning about and facing them, I stood trembling on the outside of the gate, and weeping bitterly; my tears flowed from a double cause—from fear of the geese, if I went forward, and grief for the poor bird, if I went back. In sad perplexity I looked round on every side, in the vain hope of seeing some one who might protect me from my clamourous enemies; but, alas, for poor little Katie! nobody appeared within sight.

Compassion, which was heightened by a feeling of remorse for having removed the robin from the fostering care of its tender parents, which were, perhaps, even then lamenting the untimely loss of their beloved nestling, overcame my terrors, and urged me to pass the flock of geese, which had removed to a little distance, and were now quietly feeding on the grass; and, for a wonder, suffered me to pass by unmolested.

Breathless with speed and agitation, I at length re-

gained the avenue; having replaced the robin in its nest, I had imagined in so doing I had at least preserved him from the fate of his brothers and sisters; but I was mistaken: the following day I went to visit the nest, and found the poor forsaken bird stretched on the ground beside it, stiff and cold. The parent birds had, in all probability, never returned again to the nest, after they discovered the loss of their infant brood; and the poor innocent robin was starved to death.

This circumstance made so strong an impression on my mind, that I never from that day attempted to bring up young birds; and though I found many nests in the garden, I never touched any of the young birds, or robbed the old ones of their eggs, contenting myself with watching their parental employment, from the time of building and setting to that of hatching and feeding the callow broods: indeed, so far from molesting the innocent creatures, I became their best friend, and protected them with jealous care from those who would have taken their eggs, or destroyed their young ones.

It used to be a favourite amusement with my sister Susanna and I, to watch the progress our little protégées made in forming the mossy cradles for the reception of their future nestlings. It was pretty to see the troubled bright eyes with which some blackcap or chaffinch fearfully, yet resolutely, would regard us, from beneath the sheltering leaves that o'ercanopied her soft downy nest.

Each species have some particular difference of formation or material, to distinguish their nest from that of their fellows, either in the interior or exterior dis-

posal of the articles they use. Nothing can be more exquisitely neat than the nest of the chaffinch, composed of the grey lichens of the apple or pear tree, intermingled with wool and fine hair ; unless it be that of the goldfinch, whose little nest, elevated on the tall bough of some laurel or other lofty shrub in the garden, is woven with locks of soft wool, garnished with green moss from the roots or stem of some old tree, mingled with a few grey and yellow lichens ; the inner part rendered most luxuriously soft with the silky down of the thistle ; the seed of which plant forms so principal a part of the food of this bird as to give rise to its classical name, *fringilla carduelis* (or thistle-finch..)

The greenfinch, which is a remarkably shy bird, the slightest movement or approach of any one to her nest alarming her, and inducing her to quit her eggs or young ones, builds a careless nest of moss and hair, loosely constructed, and placed in a bush or in the hedge ; quite a contrast to the neatly formed buildings of the chaffinch, the goldfinch, wren, and the long tailed titmouse. The latter, which is called by a variety of names with us, Tom-tit, Pudding-poke, and Oven-bird, is celebrated for the curious shape and elaborate workmanship displayed in its nest, which is shaped somewhat like a long bag, built round a naked spray of a hawthorn or blackthorn (sloe) ; from the stem and bark of which it picks the tiny grey lichens and mosses, which are woven with inimitable skill among threads of wool, which it unravels in its progress, lining the whole with feathers and down of the softest description, leaving only a small round hole toward the lower part of the front of the nest, by which to enter. This little creature feeds almost

entirely on insects, and has always been a particular favourite with us, from its brisk, lively manners, and the ingenuity it displays in fabricating its singular nest.

Among our particular protégées, I must not omit a wren, which for several successive years built her nest in the silver blotched ivy, that spread its variegated mantle over the low, straw-covered roof of our rabbit-house. The little creature always fixed on the same spot, or within a few inches of the old site, for the habitation of her little family; like a careful economist, making use of all the old materials that were suited to her purpose; and here, year after year, she hatched and cherished her numerous but tiny brood, free from all molestation. It was a matter of curiosity to watch her work, and see how carefully she covered the whole building, when completed, with an outer thatch of dried leaves, so artfully contrived as to hide the green mossy nest, with its tiny opening, from the prying eyes of strangers. It is wonderful how this little mother contrives to feed and nourish so many individuals, without neglecting one; and this, too, in utter darkness. There is no undue partiality displayed towards any of her numerous family, all are alike the objects of her tender solicitude.

If the wren fixes her nest in a less favourable situation for concealment, she becomes doubly diligent in shielding it from observation by artificial means. One that built in the shrubbery, among the ivy and sprays of a low stunted elm, formed an additional pent, or hanging roof of dried leaves and loose fibrous roots, to hide it more effectually from sight. The wren is, I believe, the smallest, without exception, of our British

birds, seldom measuring four inches in the length of the body; its note, especially of the gold-crested, is sweet and harmonious. The willow wren has been considered a migratory bird; it sings till October, and sometimes even later; and there is something remarkably sprightly and pleasing in its note.

Besides our wren, we had other tenants that took up their abode in the rabbit-house. There were robins that built in the closely drawn furze that formed the inner walls of the shed; little blue tomtits that fixed their abode in the chinks of the long rafters, and garnished their little nests with cobwebs, stolen from some old spider's web in the neighbourhood, while sparrows occasionally intruded into the thatch, and not unfrequently, in some suitable projection of the posts that supported the building, the grey fly-catcher chose its retreat.

The rabbit-house, though no longer appropriated to the breeding of our domestic favourites, being converted into a root-house and shed for garden-tools and other lumber, still shelters many a healthy brood; and will do so, I make no doubt, as long as it shall stand. Last summer, chancing to be cutting some flowers for a beaupot, I passed the door of the old shed, and curiosity tempted me to peep in among the leaves of the ivy, just to see if it continued to shelter any of its former acquaintance; and there, indeed, was a new wren's nest, in the favourite place, just between the twisted stump of the ivy and the wall; it seemed to be an hereditary right, which, like an entailed estate, continued to pass from generation to generation.

Before I quit the subject of birds' nests, I cannot refrain from mentioning the amusing behaviour of a fly-

catcher, while building a nest on a projecting ledge in the brick-work of the wall below my dressing-room window. This little room formed a favourite retreat during the warm sunny days of last May, for my youngest sister and I, as we were able to sit with the window open, whenever we felt inclined to enjoy the fresh air, which came to us loaded with the perfume of the cherry-trees in full bloom on the grass-plot below. Here we passed many hours of the day, not once repining for lack of amusement; indeed, it would have been strange if we had been dull, when I tell you our little room contained a variety of prints from Wouverman; some fine mezzotintos; Alexander's battles, from the French of Le Brun; with a variety of other drawings; beside books, materials for writing, and work. And even had these been wanting, other sources of entertainment offered themselves to our acceptance, which, though of a simpler kind, were not wholly devoid of interest in our eyes; these were, watching from time to time the labours of the great black humble bee collecting honey from the snowy blossoms of the pear-tree, that encompassed the window on every side, and watching the movements of a pair of fly-catchers, that were building their nest just below the sill of the window. These busy creatures were continually on the wing, dividing their time pretty equally between providing for their own wants, and building a suitable receptacle for their future progeny. The blossoms of the cherry-tree seemed to afford them an ample supply of provision; and it was amusing to see how they ran along the branches, with a swift motion, darting their beaks into the flowers, in search of their favourite food. The quickness and

accuracy of these birds' sight must have been very great, as they never appeared to be disappointed in their object of pursuit: they pursue flies and other winged insects in the air with a rapid, half circular flight, and are away again to some post, or stick, or dead branch, on the summit of which our fly-catchers delighted to take their stand.

They seemed to make little trouble of building their nest, but rather pursued it as a sort of interlude between their visits to the cherry-tree or grass-plot; sometimes they brought home a stalk of dried grass, or morsel of moss, a collection of cobwebs from the wall, or a feather: nothing seemed to come amiss that chance threw conveniently in their way, for I am sure they never went very far for materials; if a stray strip of muslin or a thread was wafted from our work-table, it was eagerly caught, and duly interwoven in the nest.

One of these neat, plain looking birds, grew so familiar with us as to hop on to the window-frame, within a few inches of our hands, peep into our faces with her cunning bright eye, steal a thread, and away with it to the nest; at last she paid her visits so frequently, and seemed so little inclined to depart, that we began to flatter ourselves our little friend had conceived quite an affectionate regard for us. But her motives were not quite so disinterested as we imagined; she had taken a great fancy to a long strip of blue muslin, which hung half in, half out of the window. This coveted piece of finery, by degrees, she made her prize, and flew with it to the cherry-tree, from whence she could more conveniently convey it to her nest, which was opposite. And here it was amusing to watch the dilemma of the poor bird, and her

indefatigable attempts to render her prize portable; her patience was truly admirable. The wind for some time baffled her design, by twisting the long ends round her little feet and legs, embarrassing her flight so that she could by no means move from the branch on which she had perched herself; and we concluded she must relinquish the attempt. Just as she had nearly conquered the difficulty, a slight gale wafted the rag to another bough of the tree; and at this interesting crisis we were summoned to dinner. On our return, we concluded the bird had given up the task as impracticable, for the blue rag was nowhere to be seen; blown away, as we supposed, by the passing breeze; and Mrs. Fly-catcher and her mate were busily engaged hunting for insects among the cherry blossoms.

Our surmises, however, proved erroneous; the perseverance of our little grey friend had been crowned with success. Nearly a month after this, a ladder was raised by the servant lad, to clean the outsite of the dressing-room window, when he discovered the forsaken nest of the fly-catchers. The empty nest was taken down, and found to display a singular variety of gay stripes of blue muslin, rags of lace, and gauze, and nearly a whole yard of new white Holland tape, interwoven with the cobwebs, moss, and other materials, which are usually employed by this bird in the construction of its nest: the interior displayed innumerable ends of cotton, thread, silk, and minute snips, which these thrifty little creatures had collected while we were employed with our needles. Some of the spoils, the tape for instance, must have been a regular theft from our open work-box, during our occasional absence from the dressing-room.

And now, having given you the account of the fly-catchers and other of our feathered favourites, I cannot conclude this chapter without again introducing to your notice my cherished pet, the robin redbreast, which, in spite of his occasional vagaries, still holds a large place in my affections; nor do I wonder at the universal partiality that this bird excites, when I re flect how the rememberance of it is associated with our earliest childhood, from being the first object to which our feelings of benevolence were directed. What child has not been taught to sweep the scattered crumbs from the table, for the robin that hops so confidingly about the door or windows of our dwelling; and whether it be a cottage or a palace, still continues to share our bounty? And, when induced by cold or hunger to visit the interior of our dwelling, what child has not felt his or her heart beat wild with delight, on beholding the little feathered stranger pick from the window-sill, or from beneath the table, the crumbs that their hands have kindly scattered for his entertainment? Or, when captured by some friendly hand, with what joy has its soft head been kissed; its bright eye gazed upon; its finely tinted breast admired and gently coaxed; and the permission of being the favoured one to set it free been eagerly sued for? And then, the satisfaction of restoring Pretty Robin to his liberty, and seeing him burst away so gladly from our grasp, and take his stand upon some neighbouring spray, uttering forth his full sweet song of thanks.

It is these sweet rememberances that makes the robin still so dear to us; the very sight of it recalls *home* to our minds—the home of our infancy; that nursery

of our young heart's affections, of its first ideas; of all our childish joys and childish sympathies.

I remember, one cold winter, we had no less than five pet robins, which daily visited our pantry and kitchen: these little creatures thankfully received our donation of crumbs and corn; and one in particular attached himself so much to us, that he would fearlessly hop across our feet, and look up in our faces with his cunning black eye, as if he would have said, "Are you displeased at such liberties?" The other robins left when the mild weather returned, but this pretty creature continued to visit us occasionally all the spring, and built its nest in the middle branches of a laurustinas-tree that grew near the lattice of the pantry window. Here I must observe, that the nest of the robin is rather a slovenly piece of architecture, being loosely and carelessly put together, without much attention to shape or neatness; it is composed of dried leaves, ragged moss roots, and hair, with a few feathers in the interior. The robin builds occasionally in the sunny side of a ditch or bank, or within a shed; but more generally in some leafy bush near the ground.

There is something peculiarly charming in the song of this bird; so clear, so exhilirating, that it gives me positive pleasure to listen to its carol. Even in spring, when the air is filled with music from every bush and tree, I can distinguish the clear sharp note of my favourite songster among the general chorus.

Last winter one of these birds, urged by the inclemency of the weather, became our constant guest, leaving the kitchen only for short a period at a time. This little fellow made himself perfectly at home with

the servants, attending their table during meal times, and receiving all scraps with which they were pleased to favour him; taking his stand on the frame of one of the neighbouring chairs, from whence he had a good view of the ground beneath the table, ready to hop forth when a crumb fell. He enjoyed, indeed, the range of the kitchen and pantry at will, and throve exceedingly on his good fare; from being small and thin, Mr. Robin plumped out into a fine fat bird, and became so bold and saucy, that he would so far forget his good manners as to hop on to the table, and without waiting for an invitation, help himself to bread, and any morsel that lay conveniently in his way: nothing escaped his clear bright eye. His favourite situations were on the top of the open pantry door, the frame of the old fashioned round table, or one of the oaken pegs behind the kitchen door, where he would sit and warble forth his sweet song, as if to reward us for the food and shelter we afforded him. But though he was, without exception, the finest and handsomest, and most familiar robin I ever saw, I must confess he was not without his faults, as his behaviour one day fully proved.

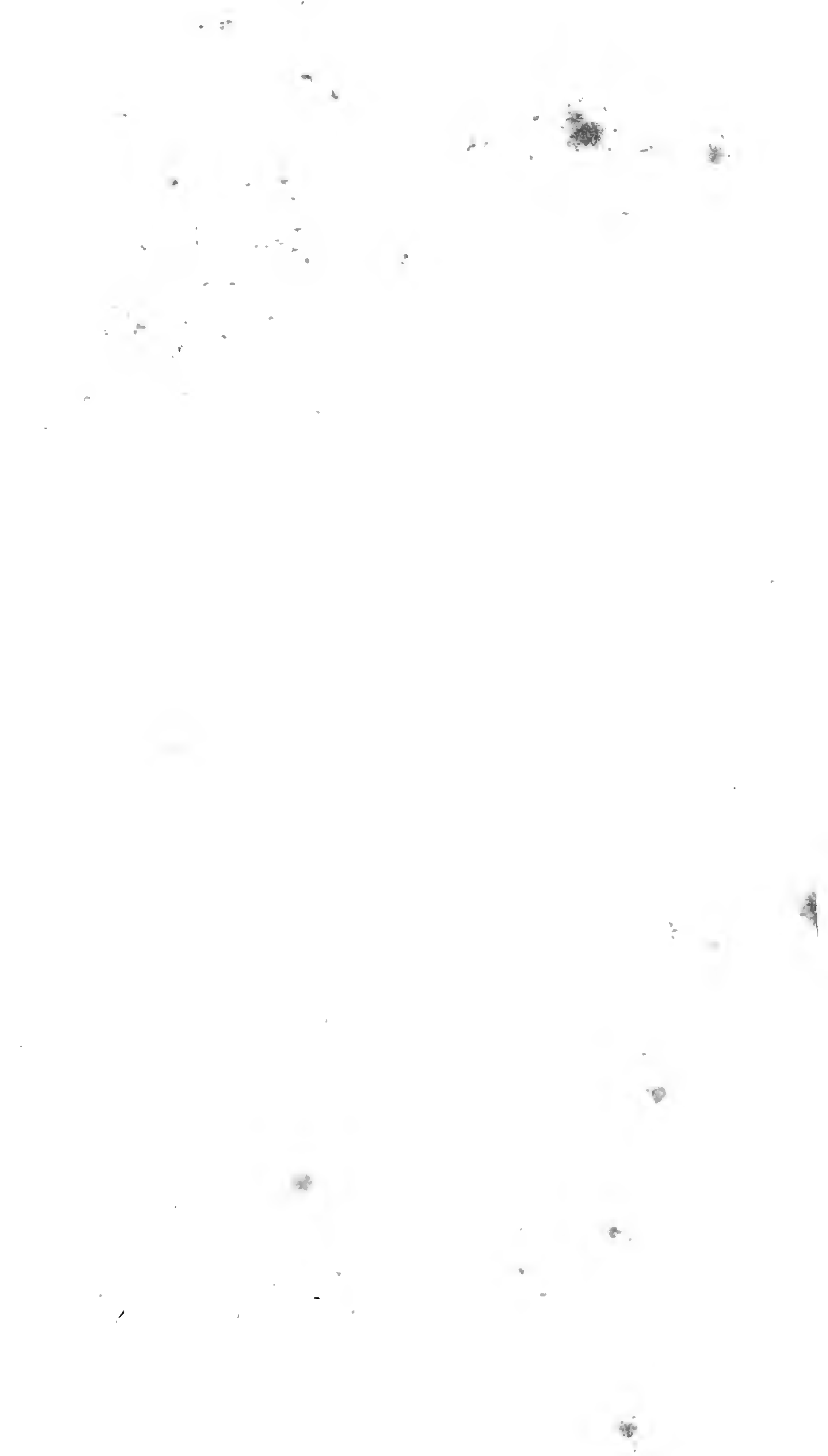
One cold, snowy morning, robin was absent from the kitchen much longer than usual, and we were beginning to wonder what had become of him, when he suddenly made his entry through the open lattice of the pantry, accompanied by two other robins, exceedngily lean and ill-favoured; forming a striking contrast with our fat, comely little friend. It was evident these two were invited guests, by the patronizing manner in which Mr. Rob did the honours of the house; introducing them to his favourite perches, and showing them where the best food was to be found. This was

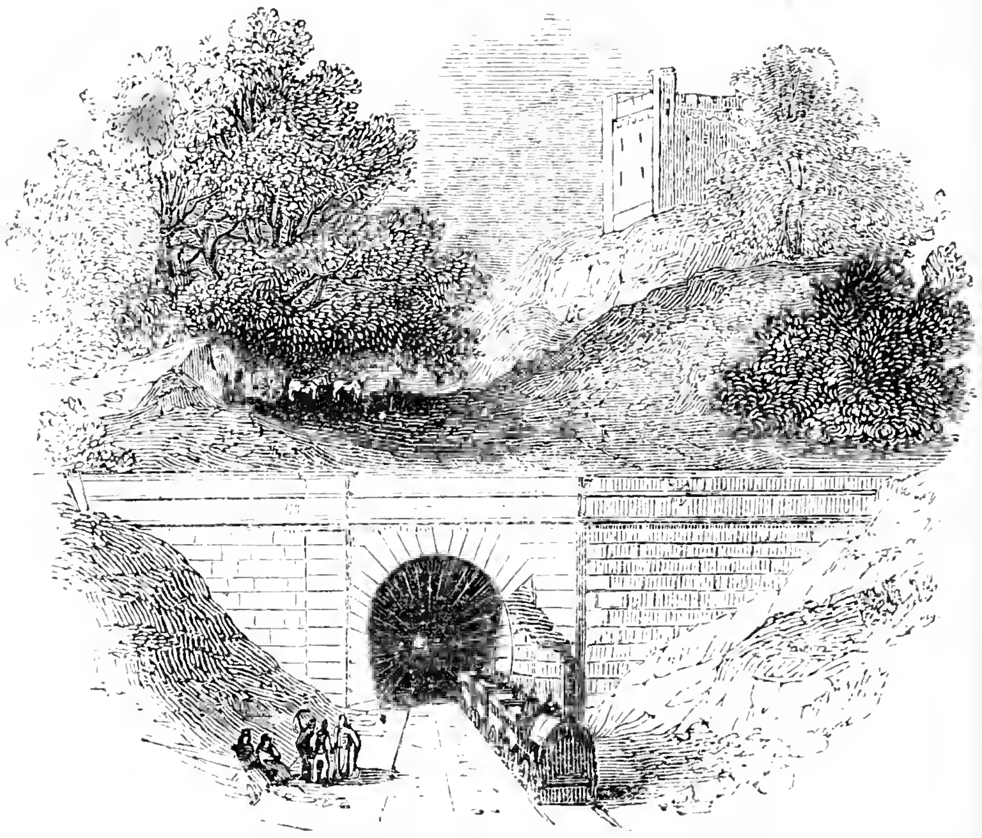
all very well ; but I am sorry to say, his subsequent conduct was not distinguished by that kindness and liberality the votaries of true hospitality are bound to observe. Scarcely had his hungry visitors begun to partake of the crumbs that were scattered beneath the table, than he bristled up his feathers, hopping about with a menacing air, and scolding in harsh and angry tones. A battle immediately commenced, which was maintained for some minutes with great spirit, by one of his outraged guests ; but victory decided, at length, in favour of our old acquaintance, he being half as big again as his famished adversary. Having driven both his visitors from the kitchen, Rob returned elated with success, and flying to his favourite peg, sang a song of triumph ; puffing out his red breast, and ruffling his feathers, as if to express his satisfaction for having vanquished his enemies.

This ungenerous behaviour, on the part of old pet, quite lost him my esteem ; and proved the opinion of naturalists to be just, when they declared the robin to be combative, jealous, and selfish towards his own species, though gentle and confiding in his general behaviour to man.

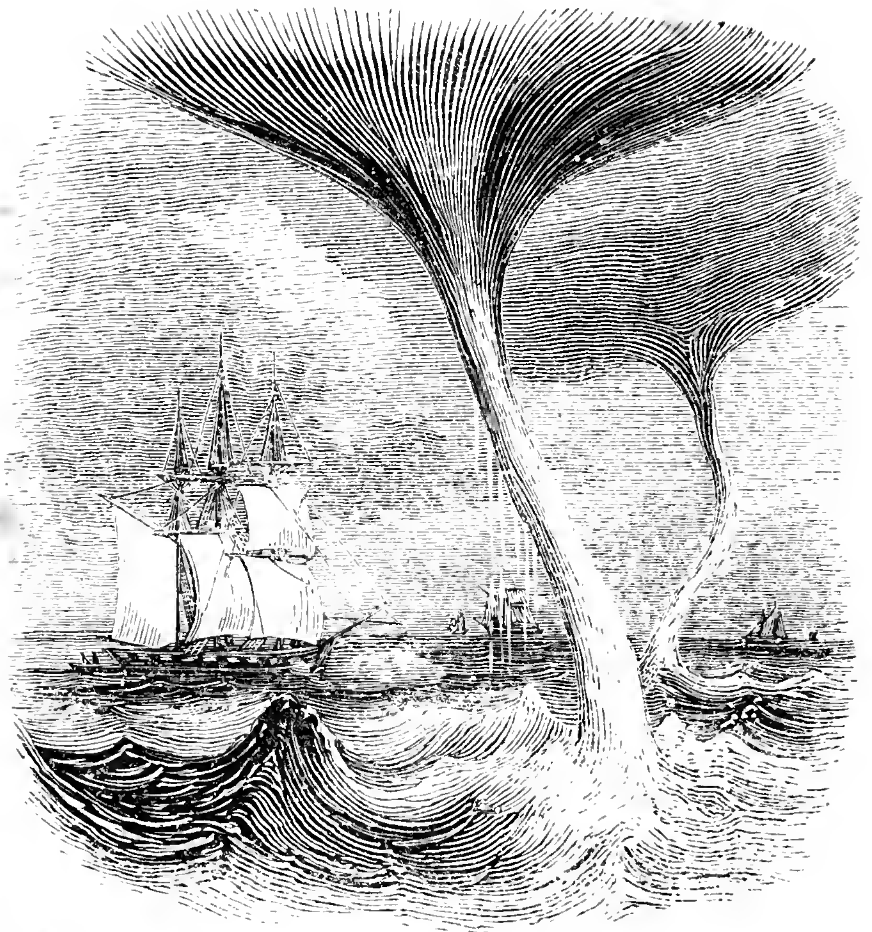
These birds emulate each other in their songs ; and it is almost laughable to observe the airs of offended dignity evinced by these little songsters, if one appears to excel the other in the length and compass of his warbling.

The robin is a native of the whole European continent, and in all countries is distinguished for the confiding manner in which he enters the dwellings of man, and silently, as it were, prefers his claims for food and protection. His attractive little ways endear him to us, and he ever receives a kind and affectionate





Railway Tunnel.



Dangers of the Ocean.

welcome. In every country he is distinguished by some familiar appellation. In Sweden he is called Tommi Liden, in Norway Peter Ronsmad, in Germany Thomas Gierdet, in Italy he is Petto, Rosso or (Redbreast,) and in England Robin, " Pretty Robin Redbreast."

CHAPTER XV.

The History and Importance of Railways.

THE world has been continually changing, since it became a world, and every successive change has been improvement. The present age seems to be a climax to the world's past glories—not that we would for one moment intimate that the climax, the final climax is attained; but that the age in which we live is a grand improvement of the past, a noble prophecy of the future. Could some even of our more recent fathers start from their graves, would they not conclude that the world in which they spent a brief portion of their existence had entirely passed away? And should we not find it difficult to persuade them that our London is the very metropolis in which they moved? I have pictured to myself the degree of wild astonishment which would pervade their minds, and have often thought of the eye that would glance around them in search of some quiet sedan, and the surprise which would fill their minds when told that they were all but entirely banished from use! But verily there is one point which would astonish their ghostships more than all; namely, to see vast carriages propelled forward apparently by their own innate power—*that* would be the *ne plus ultra* of their surprise; and connecting with it the stupendous leviathans of

our modern seas, the steam-boat, these hoary men would certainly imagine that that bright and snug little world,—if indeed they could bring their minds to believe it to be the same which they had left reposing in such beatific quietude, on which they had so unconcernedly trod,—had undergone strange catastrophes, and had, without an allegory, been turned upside down. Let us figure to ourselves for a brief instant of time, one of the Druidical dead starting from his entranced slumber of long ages, and, rising to some elevation whence he had often in the days of his flesh glanced over the wide extent of country; when he stood there before, nothing was to be seen but the rolling torrent and the wide spreading forest—now, on his every hand rise immense viaducts, stretching away in a long perspective, and on his ear come the echoes of more than one rumbling carriage reflected and repeated from the mountains around. What would the Druid say, what would be the emotions of his mind on beholding this spectacle? When acquainted with the history he would exclaim, this people have conquered nature herself! and if he were a thoughtful man, he would ask, are they better for the conquest? he would say, this nation by improvement has facilitated its greatness; and if he were a good man he would ask, by this is the cause of happiness and humanity accelerated? Now these are two questions of primary importance, and it needs no particular perception to see that Railways bear upon the sphere of improvement, and the nation's greatness. And here it is worth while lingering one moment to notice the striking contrast exhibited by ancient and modern roads. Those in the immediate suburbs of London, not many

years since exhibited a danger which we in vain search for now; it required a degree of unexampled courage to travel ten or fifteen miles, for even turnpike roads were not exempted from the perils incident to those parts of the country, lying more remote from the metropolis. But not only was the inconvenience of this dilapidated state of the roads felt as regarded personal comfort and safety, but the commercial interests of the country materially suffered, and in nothing more than the coal-trade. At the coal works in the neighbourhood of Newcastle-upon-Tyne, the expense of conveying the coals from the pits to the places where they were to be shipped by sea, would be very great. Down to the year 1600, the only mode appears to have been by carts in the ordinary roads, and in some cases by panniers on horseback. About that time railways appear to have been introduced into Newcastle as substitutes for the common roads. In 1676, they are thus described. "The manner of the carriage is by laying rails of timber from the colliery to the river exactly straight and parallel, and bulky carts are made with four rollers fitting these rails, whereby the carriage is so easy that one horse will draw down four or five chaldron of coals, and is an immense benefit to the coal merchant."

It may not be uninteresting to trace the history of the simple railway, its varied improvements, and the multifarious purposes it was intended to serve. The first mode adopted was that of wood; to this, in the commencement of the last century, iron rails succeeded. This plan, however, was found deficient; the wheels were apt to run off the rails, and it therefore became necessary to adopt some remedy to prevent

this evil; and the mode that was adopted was the affixing a ledge, or flange, as it is called, to the side of the rail. This was the position of railways about the years 1780 and 1790. Animal power was still the only means by which the carriages were propelled; the mighty power of steam was as yet unknown, although several experiments had been made of it on and in the water. But by this power, a revolution, in itself of a most important character, was effected in the progress of commercial interests. It was in 1759 that the first idea of an application of steam power to the propelling of carriages was thrown out by Dr. Robertson, the Historiographer, then a student at Glasgow. It was reserved, however, for the mighty mind of James Watt fully to realise the idea, and to give to the principle an impetus so lasting that its power should be felt to the latest period of human history. In 1787, Mr. Symington exhibited the model of a steam-carriage in Edinburgh, but it was not until 1805 that Trevithick invented and brought into use a machine of this kind upon the railroad of Merthyr-Tydvil, in South Wales.

It has often been remarked as a singular fact, that scientific men see difficulties where difficulties do not exist, and needlessly harass and perplex their minds upon subjects which are in reality as clear as a moonbeam. Thus it was that the projectors of locomotive carriages created an obstacle which is now known to be altogether imaginary; and perhaps more time was wasted and more energy expended in endeavouring to obviate this obstacle, than would have sufficed for bringing the principle of locomotive power to the highest degree of perfection. This imaginary

assumption was, that the adhesion of the smooth wheels of the carriage to the equally smooth rails on which they run, must be so slight that it would be impossible they could advance, because of a constant tendency to slip, or that, at any rate, a great portion of the impelling power would be lost. Trevithick provided against this in the construction of his carriage, and a far more elaborate invention was made the subject of a patent by Mr. Blenkinsop, in 1811. Yet there was but little countenance given to the "impracticable theories," as they were then supposed to be, and locomotive carriages were considered innovations upon the established order of things; and it was not until 1825 any plan was adopted for the forming of railways to any great extent. Since which period, such have been the gigantic strides made all over the country in the erection of railways, that it would be no easy task to describe one half of them; and the facility now afforded for travelling is so great, and the rapidity of transit so extraordinary, that a distance of 100 miles is now accomplished in three or four hours.

In the construction of railways many difficulties have to be surmounted, and those difficulties are neither few nor slight, for in a couutry with a surface so variable as that of England, almost every contingency that could be imagined has to be provided against: the vast plains of America, and the flats of Holland, are never seen in our country,—here hills have to be levelled, and valleys raised, rivers to be crossed, waters to be turned, marshes to be made firm, tunnels to be formed, excavations dug, and every accident provided against that could either affect the labour of the machinery, increase the wear of the engines or

the rails, or interfere with the safety of the way; and when we consider the recent rise and progress of railways, we must feel surprise, that in so short a space of time all these difficulties should have been conquered; it certainly evidences the high degree of attention they have received, and the enthusiasm with which they were hailed, when the first foolish notions respecting their probable effects had subsided. Doubtless the novelty of the principle of steam, without which they certainly would never have excited so much *eclat*, has aided all the bearings of the question, and materially tended to their increasing popularity. The tunnel has tended more to exercise the skill and patience of the engineer than any other difficulty connected with railways. It is a singular spectacle, the passing through a tunnel, and a singular feeling too with which one listens to the thunder and the din of the rumbling machine, as we roll on and see only a small speck of white before the eye, until we burst again from the darkness into the broad and beautiful daylight.

It may with safety be questioned whether any one light ever kindled on the altar of science has sent forth so bright a stream of glory as this. If it be indeed the case, as an eminent political economist has remarked, that the man who plants an ear of corn where only rank weeds had flourished before, had done more than the mightiest conqueror to benefit mankind, how much more is he to be eulogised who pours the wealth, the riches, and the honour of other lands, before unknown, through every vein of the nation! Steam is the power which annihilates time and distance, and unfurls the flag of commerce by land as well as by sea.

What grand achievements future history will record concerning this power we cannot tell; perhaps there are events to be accomplished, which, if it were possible they could be foreseen, would excite in our minds as high a burst of astonishment as that which rose in the Druid's mind, to whom allusion has before been made. If the march of scientific discovery has been onward in every age, there is surely no reason to believe that we have now arrived at a resting point; therefore do we not repose on our achievements,—we may glory in the fact, that our country has been the theatre for the sublime efforts of mechanical genius, but still there must be no repose.

Dangers of the Ocean.

All the phenomena of nature, when we come to investigate them closely, and endeavour to ascertain their causes, are wonderful; but there are some so plain and simple in their working, and so every day in their occurrence, that we pass them by unheeded,—and by so doing, not unfrequently miss wisdom in those paths in which it is most readily and most plentifully to be found; but there are other displays and demonstrations of natural action, which are so magnificent and so unwonted that they take the senses by storm, and so arrest and confound the mind as to shake it from the foundation of its ordinary philosophy.

Among these more wonderful, more majestic, and for these reasons more mysterious phenomena of nature,

Water Spouts well deserve to be numbered; for, they are not very common, they are both local and seasonal! and those small philosophers who are but little gifted with the faculty of generalization, are in doubt about their causes. They do occur, however, in the British seas, and bays, and estuaries; and though they are not so destructive at sea as sometimes represented, still they may be classed among the dangers of the ocean, and I remember reading an account of one of these extraordinary appearances, which may serve more clearly to illustrate what I have before written on the subject of water-spouts. The author says—"In early youth, when all nature was new and wonderful, we were, upon a summer day, when the heat of the sun was excessive, and all the air transparent as "one perfect chrysolite," in a lonely situation, amid extensive moors, wild lakes, and gray stones of giant dimensions, and mouldering and monumental castles, and countless memorials of deeds, in which the Romans and the Caledonians had met, steel to steel—where, in short, man seemed to have quitted the earth, the hand-writing on his monument followed him, and the children of rude nature tenanted, as in the beginning. It is in such a place that we were—it boots not for what purpose, because then we had not seen the sun of a half-score of summers. But there is a power in the majesty of nature which can gratify and delight the very young and the very thoughtless—to both of which we confess: and so it was in the case to which we are alluding. The horizon was ample, but everywhere bounded by land, though the sea was only five or six miles distant to the eastward.

It was the most sultry hour, somewhere between two and three o'clock; no bird nor even butterfly was on the wing, and the restless old aspen tree, which overshadowed part of the ruins of the Stynd Castle, was as motionless as if the destroying angel had passed over it, and extinguished its motion by the touch of everlasting rest. While panting in the excessive heat, we observed in the eastern sky what seemed to be the smoke from some weeds that might be burning on a farm over the hill, and as there was no wind, this column of apparent smoke ascended perpendicularly, and gradually reached the zenith.

When there, the apex of it had a revolving motion, which was distinctly visible, and as it whirled round and round, its dimensions enlarged and its colour darkened, the column from the east still ministering to it, apparently with increased velocity. At first the increase of the revolving cloud overhead was gradual, but as it enlarged, so did the rate of its enlargement; and after, perhaps, an hour, it darkened the sun. When it had completely accomplished this, the effect was incomprehensible then, and it is indescribable still. There remained a ring, or zone, yet of considerable dimensions, around the whole horizon, which threw in reflected lights on every side, and in faint and shadowy touch—for we cannot call it tint—the landscape was mirrored upon the concave of the revolving cloud. It enlarged, and enlarged out, until the clear part of the sky—now turned to a golden green of somewhat fearful lustre, was little more in breadth than a thread, and, yet a few moments, and this was extinguished, and the blackness of darkness brooded over all the visible portions of the heavens and the

earth. We shall not attempt to say what our feelings were, because there is small instruction in the personal feelings of an idle boy; but the reader can easily place himself in our situation, and imagine what he himself would feel. But such displays are not of every-day occurrence; but to a lover of nature, one of them is worth a week's waiting for.

It was not the darkness alone—the indescribable mixture of lurid purple and raven grey, which no words can express and no pencil delineate; for there was an oppression upon the sense, as if the heavens and the earth had been coming together with the slow but sure process of an hydraulic press, and life had been about to be extinguished by some strange anomaly of the very elements of its support.

But this painfully oppressive darkness and stillness—for all nature seemed hushed in terror, lasted but for a few moments, and then gleam went the lightning, and crash went the thunder, as if heaven and earth had been hurtling together in their final ruin. Down came the rain, as if the clouds had been peopled with pitchers, and the whole of them had been overturned in a moment, and ere we could make our escape to the vault of the old castle, which was not forty yards distant, we were knee-deep in water on the level sward. So much for the breaking of a water spout upon the surface of ground too level and too strong for doing any material injury."

CHAPTER XVI.

My brother Tom was remarkably fond of domestic animals of every kind, and when a young boy, was never without one or more pets on which to lavish his regard. He was an affectionate, kind-hearted little fellow, and careful that the creatures under his protection should want for no comfort that he could procure them: never leaving home without first supplying the wants of his little favourites, and duly recommending them to the attention of those persons with whom he possessed the greatest influence, that none of his creatures might suffer from his absence.

At one time Tom had quite a domestic menagerie, in an outhouse that he had fitted up for their accommodation. Among the most remarkable members of the collection were three beautiful rabbits of the French breed, that had snow-white coats, the hair of which hung down to the ground, of a delicate silken texture; a guinea-pig; two very handsome kittens; a tame chicken, that he rescued from the devouring jaws of a voracious old sow; a box full of white mice; and a mongrel dog named Rover. In addition to these, he had a magpie, and an owl named Otho.

Between the rabbits, the kittens, and Rover, the greatest harmony existed. They had all been brought up together, and the force and habit and early association had entirely subdued the enmity that usually subsists between these animals. The cavy, or guinea-pig, was a stupid and rather uninteresting member of

this little society, and did not attach himself to either of his companions; but Rover and the rabbits were so fond of each other, that they were always to be seen reposing in one corner of the house, nestled together among the straw: or, if the rabbits had been removed to the box appropriated to their use, Rover would mount guard on the top, as if to defend his helpless companions from the assault of any enemy that might intrude upon their privacy to molest them.

One day, the door chancing to be left unfastened, the rabbits made their escape into a distant clover-field; and on Tom's return from a stroll in the plantation, accompanied by Rover, he espied his three runaways feeding at large. After some difficulty he succeeded in catching two of them; but the third baffled his skill, and he was obliged to leave Rover to keep watch, while he hastened home with his two naughty truants. A few minutes afterwards he called me to witness the novel sight of the dog bringing back the fugitive rabbit in his mouth, quite unhurt, and safely depositing it with its fellows in the house. I have seen him twice perform the same good office, and with an equal display of care and tenderness towards the little animal, which appeared to receive no particular injury from this mode of being carried; and what was even more surprising, evinced no marks of terror, on finding himself in the jaws of a creature, towards which, generally speaking, they inherit an instinctive dread. So powerful are the effects of early education and habit in overcoming natural instinct.

Now I must tell you, that my brother Tom had

taken into his head to long for the possession of a tame jackdaw, under the vain idea of teaching it to talk; and as he could not easily procure one of these birds by any other means, he climbed the old ash-tree, that grew in part of the garden-paling, and took from a hollow branch, which the daws had for several succeeding years usurped as their right, a nest containing five half-fledged birds, the dark unsightly skins of which were scantily concealed by a covering of stumpy black feathers.

Tom attended so indefatigably to the wants of his young carders, (as in our part of the world the country folk call jackdaws,) that he began to entertain ideas as to the possibility of their being reared, when an unforeseen termination was put to all Tom's lively hopes. He had been invited by some young friends to join a fishing-party, which would in all probability detain him the whole day from home; but before he set off on the expedition, he earnestly recommended his precious brood to the attention of the cook-maid, with whom he chanced to be a very great favourite; "because he was so kind," as she used to say, "to poor dumb things." Moreover, old Hannah and my brother Tom went partners in the possession of a grey Cypress cat. Hannah promised her young master to attend like a mother to his young carders, and that they should want for nothing good in his absence; and Tom, who had carefully provided a good store of provisions for them, which he bought with his own savings, considered he had done all things necessary towards ensuring the comfort of his birds, in leaving so worthy a substitute in his stead. But alas! whilst old Hannah was gone to the gate of the court-yard, to see her dear Master

Thomas well mounted on black Sloven, his donkey, the grey Cypress cat (an errant thief) had found her way into the pantry, had eaten the last morsel of chopped meat, which Hannah had carelessly left uncovered on a shelf in the pantry, and was diligently licking the plate when Hannah returned. I am afraid the old woman, in the first burst of her indignation, bestowed some hard thumps on poor puss, for our ears were saluted by some pitiful mewings just about that time. It was an unfortunate circumstance, but it so happened that there was no more fresh meat of any kind in the house, but plenty of excellent salted beef and pickled pork. The young birds soon became clamorous for a supply of food, and Hannah, thinking what was good for human beings must be equally so for birds, and possibly considering that a dinner of salt pork would be an agreeable change, treated the poor birds with some pieces of meat from the brine, cut rather larger than usual, so that one or two of the unhappy jackdaws were choked in their endeavours to swallow these delicate morsels. The rest she dosed with several teaspoonfuls of toast and water, to wash down the pork, and, as she said, to prevent the poor creatures from being thirsty.

This novel diet agreed so ill with the little carders, that when their master returned, and hastened with anxious interest to visit his young family, not one was left alive to greet him. Great was his indignation at the sight of the dead birds. He instantly accused old Hannah of having neglected them during my absence. This charge she refuted ; exclaiming in a pitiful whine, "Sure, Master Thomas, if I didn't feed them with the best of pickled pork, and washed it down with plenty

of nice toast and water to strengthen them: and if that an't doing well by them, I don't know what is." To have convinced Hannah that salt pork was not good diet for young jackdaws, required more eloquence than any of our household possessed. She persisted in attributing the death of the young birds to every cause but to that of her own bad management.

The next object of Tom's regard was a white owl, which had been caught in a trap set for rats in the granary. The owl was not severely wounded, though disabled from seeking its living as formerly by flight, the pinion of one of the wings being hurt. This bird way immediately taken under my brother's protection, and allowed a place under an empty cask which had the bottom out, and one of the staves broken, so as to allow a free egress and ingress to any creature of a moderate size that might choose to shelter under it. Beneath this cask Otho the owl lived all day, excepting when Tom chose, for his amusement, to bring him into the house; of a night he enjoyed the range of the garden undisturbed.

Now I must tell you that Tom did not like any one should tease his owl but himself: and we were all rather fond of exciting the wrath of this solemn bird, by rolling a stone towards him, an empty cotton reel, or something of the sort, just to see him lift up his great wing and put out his sharp talons, and hiss and scold, or throw himself on his back, when any one approached him. Besides, he used to look so droll, sitting in a corner of the room, nodding his head and looking so wise, with keen black eyes, and hooked beak,

buried in the white feathers, that surrounded his face like a swansdown wig.

One day Tom came into the parlour, while we were all sitting at work, with his owl Otho under his arm, evidently much discomposed. On enquiring the cause for his displeasure, he replied that Miss Jane's cat had robbed his owl's pantry in the most unprincipled manner, of two mice, a bat, and some bits of meat, which he had with some trouble procured, and now the poor thing had nothing left for his supper. Somehow this intelligence was given with such an air of offended dignity, yet with so much simplicity, that instead of awakening our sympathetic feelings in behalf of the injured owl, we could not help laughing. Our ill-timed mirth had the effect of increasing poor Tom's displeasure; and he who was, generally speaking, full of mirth and good humour, now took it into his head to be seriously offended; and when Jane offered to amuse herself, and bring him into good humour, by teasing Otho, he rose from his seat with a resolute air, saying he did not choose his owl to be so insulted; and added, as he left the room: "Miss Jane, I would advise you to take the last look of Otho, for that owl you shall never see again." Now, by some mysterious coincidence, Tom's words were verified, for neither he nor us ever saw the owl from that day; it disappeared in the course of the afternoon, and was never seen again.

Tom's attempts at rearing and keeping birds proved as unsuccessful as my former ones had done with regard to the young robin. I must confess, taking young birds from under the parent wing, is a practice for which I am no advocate; it is so seldom these

attempts are crowned with success; and so many helpless creatures are exposed annually to the miseries arising either from starvation and neglect, or over-feeding with improper aliment. I would rather dissuade my young friends from any attempts of the kind. To those that possess benevolent feelings and kindly dispositions, I would plead on behalf of the tender nestlings, which are taken from beneath the fostering care of the parent bird, from the warm and sheltered nest, to be placed in some rude basket or cage, where they are exposed to the inclemencies of the cold air upon their naked unfledged limbs, and the painful sensations arising from hunger and thirst, or the want of that peculiar food which is so absolutely essential to their preservation; and to seek which many birds migrate, previous to the period of incubation, to those countries that produce the particular insect or seed requisite for the nourishment of their offspring; guided in their flight across unmeasured distances of sea and shore, by that unerring Wisdom which governs the animal creation, from the emmet that crawls upon the earth, to the eagle that builds her house among the cloud-capped rocks. To man is given reason and power to exercise his judgment, and he is accountable to his Maker for all his actions. A superior intelligence governs the animal world: they obey an unerring law, from which they never swerve. This law they call instinct. It was established by their all-wise Creator, and like the rest of his works, fills us with admiration, and obliges us to acknowledge his wisdom is excellent, and his ways past finding out. This instinct, that leads so many of our birds to migrate in winter to warmer climates, or brings the

natives of warmer climates to pass the breeding-season with us, incomprehensible to our reason; we can only refer the wisdom of the bird back to the providential Power that made the creature subject to a law whose impulse they obey with one accord.

When my two eldest sisters were little girls, one six, the other eight years old, they had a tame sparrow, which had been injured in a trap; the gardener was just on the point of wringing its neck, when, touched with pity for the poor little bird, they begged Simms (that was the gardener's name) would give it to them. This he accordingly did, first binding up the injured leg with a split reed, drawn from the thatch of one of the outhouses; the hollow part of the reed being placed so as to admit the bird's leg, and then bound carefully together with a bit of soft thread; thus giving the broken limb an artificial support. The plan succeeded so well, that in the course of a week or ten days the bandage was able to be removed, and the sparrow could hop about almost as well as before it received the injury.

During the time of its confinement my sisters attended its little wants with unremitting kindness; and this pretty creature became so sensible of the attentions it received at their hands, that it evinced the most lively regard for them, hopping towards them gratefully, and picking the crumbs from their hands. I regret to say, this affectionate little creature was killed by a cat that chanced to enter the nursery while the nurse-maid and the children were gone out for a walk in the neighbouring meadows.

My sisters lamented greatly for the cruel death of their pretty favourite; and the footman, who was

a remarkably good-natured man, seeing his young ladies so grieved for the loss of their pet bird, set a brick-trap in the court yard, and soon succeeded in capturing a fine fat cock sparrow, which he offered for their acceptance, to supply the place of the dead bird, which, I must tell you, was a hen sparrow, of no particular beauty, either of plumage or form; but though the new bird was much handsomer, it was very bold and fierce, not at all resembling the meek, gentle creature they had lost; and instead of appearing at all grateful for the attentions he received, this saucy sparrow resisted in a violent manner all attempts towards reconciliation.

Finding their overtures towards friendship vehemently resisted, and fearing he would beat himself to death against the nursery window, they agreed to restore the little rebel to his former liberty; but previous to letting him go, Agnes placed about his neck a large gilt earring, that one of the servants had given her that very morning, having broken its fellow, and not thinking it worth replacing. This ring Agnes fastened round the neck of the sparrow, and opening the window, sent him back to his mates, that busy little crew that were all dressing and pluming their brown feathers, perched on the naked sprays of the elm trees on the bleach below; to whom I dare say he told a very sorrowful tale of the terrors he had endured, from the time he became imprisoned in the brick trap, till the collar was fixed about his neck and his liberty granted.

Nearly two years after this adventure, papa was firing his gun at a flock of small birds that had nearly destroyed all his new-sown raddish seeds, and was

perfectly astonished, on finding among the killed and wounded, a sparrow having a gilt ring round his neck. On mentioning the circumstance in the parlour, the sparrow and ring were both identified by my sisters to be the very same they had formerly set free from the nursery window.

I have often been amused, when a child, by hearing mamma tell the story, how she was deceived by a bird-merchant, when she first married and came to live in the vicinity of London.

One fine spring afternoon, as she was sitting near the open window, at work with a young lady, (a friend who was staying with her on a visit,) a man stopped at the window, having several cages in his hand, and asked mamma if she wished to purchase a rare singing bird, that had been brought from foreign parts; as he spoke, holding up to view a cage containing a bird of most magnificent plumage, having a fine long drooping tail of scarlet and blue feathers, and a crest of the same splendid colours, curiously striped across with black. The body and wings of the bird were small in proportion to its crest and tail, but delicately formed, and displaying a variety of hues. The asking price of this handsome creature was fifteen shillings, but after a little hesitation, the bird-merchant consented to let mamma have cage and all for half-a-guinea. He vouched for the fine singing of the "Peruvian warbler," as he termed the bird; and assured mamma and her friend, they would be enchanted by the melody of his notes, when once he began to sing; adding, the bird would be rather shy at first, and required to get used to his new situation before he displayed his vocal accomplishments. He added moreover, as one of his

merits, he was not at all dainty, and would eat the commonest sorts of seed and corn.

After having heard so fine a character of the "Peruvian warbler," mamma could not resist her own inclination, and the entreaties of her friend, to purchase him. The money was paid down, the cage handed over to her, and the bird-merchant departed.

For some time mamma and her friend could not do a stitch of work for admiring the gay colours of the bird; but they shortly began to notice the want of proportion in his form, and the awkward manner in which he carried his head and tail, which seemed as if they did not belong to him: besides this he had a very pert, familiar air, not at all according with the grace and dignity expected from his foreign breeding; but still they were far from suspecting the cheat that had been put upon them, anxiously listening for the commencement of his tuneful song, and were not a little mortified when, after puffing out his breast, and giving evident signs of his intentions of favouring them with a tune, he suddenly stopped, and eyeing his auditors cunningly through the wires of his cage, only uttered forth, in clear distinct tones, the significant and well known cry of spink, spink, that distinguishes the chaffinch from his tuneful companions of the fields and groves. Still they were unwilling to think they had been deceived, and flattered themselves with the idea, that spink, spink, might be only a familiar prelude to a better song, like the scraping of a violin preparatory to the musician's commencing a fine air. But this cherished hope was of short duratiou. When papa returned home to tea, he walked up to the cage, and no sooner had he glanced upon its tenant, than his

quick eye discovered the cheat, and he proclaimed the fine feathers that adorned the head and tail of this "Peruvian warbler," to be entirely artificial, and the rest of his gay colours only the effect of paint, skilfully laid on. Mamma and her young friend were not a little chagrined at this mortifying declaration; but still encouraged a faint hope that this *rara avis* did not owe his beauty entirely to borrowed plumes. A few days, however, put the matter beyond dispute; first, his fine crest dropped off, next his long tail; and when divested of these external decorations, mamma beheld with regret her fine foreign songster, her "Peruvian warbler," to be nothing more nor less than a mere English chaffinch, a bird of the smallest reputation for vocal powers of any of the feathered choir; inferior even to the common sparrow.

Never did any prisoner seem more charmed with being released from his fetters, than did the poor bird from the incumbrance of his borrowed finery; his black eye sparkled with delight, as he hopped about his cage, uttering, at intervals, his familiar note of spink, spink.

As mamma saw no reason why this poor chaffinch should be kept shut up in a cage, she caused the servant to set the door open and offer him his liberty; but if mamma did not know when she had a good bird, the chaffinch knew when he had a kind mistress and a good home, and refused to go away. So mamma had the cage hung over the door of the summer-house, to the end that Mr. Spink might stay or go, just as it pleased his fancy, continuing to supply him with food and water. These favours he seemed very sensible of, and continued to eat his seeds and return to his perch in the cage at night; enjoying the liberty of the garden

all the day. His docility and attachment rather endeared him to his mistress and the household; and he continued to live in the garden till the following spring, when it is supposed he joined himself to a company of marauding sparrows and chaffinches, that came to pay their respects to beds of new-sown garden seeds, as he disappeared in their company, and was never seen afterwards.

Before I dismiss the chapter on birds entirely, it may be as well to give a few particulars relative to the natural history of the owl. There are no less than forty-six species included under the general name of *strix*, but I shall confine myself entirely to the common white owl (*strix flammea.*) The usual weight of this bird is about eleven ounces; its length fourteen inches; its breadth, from wing to wing, nearly three feet. The upper part of the body, the coverts and secondary feathers of the wings, are of a fine pale yellow or buff: on each side of the shafts are two grey and two white spots, placed alternately; the exterior of the wing-feathers yellow; the interior white, marked on each side with four black spots. The lower side of the body wholly white; the interior feathers of the tail white; the exterior marked with dusky bars: the legs, which are short and thick, are feathered to the feet; the toes are armed with strong hooked talons; the edge of the middle claw is jagged. The eyes are black and piercing, and surrounded by a circle of thick, soft, white feathers, which appear to defend the eyes from too great a glare of light

The white owl is almost domestic; inhabiting, for the most part, our barns, haylofts, granaries, and other

out-houses; and is very useful to the farmer in clearing these places from mice.

Towards twilight it quits its perch, where it has sat dosing during the day, and takes a regular circuit round the fields, skimming along the ground in quest of mice and other small vermin. Country people pretend to prognosticate the weather by the flight of this bird.

They seldom stay out long together, returning to their old retreat to devour their prey, which they carry in their claws. This species do not hoot, but hiss and snore; and while they fly along the ground, will scream most frightfully. They are a bird of prey entirely, but their principal food is mice and birds: like all their species, the light is extremely obnoxious to them, and appears to render them blind while exposed to its influence, as they stagger and often fall backwards when brought to a strong glare of sunshine. They are remarkably fierce when offended, and will bite and tear with their claws any thing that comes in their way.

CHAPTER XVII.

One cold, bright afternoon in February, my sister and I went out to take a ramble by ourselves in some pretty wild, woody lanes that skirted the park and grounds of a nobleman, whose land lay contiguous to our own estate.

In spite of the keen influence of a north-east wind, we enjoyed our stroll exceedingly; finding plentiful amusement in listening to the cheerful carol of the

robbin, and the first melodious songs of the blackbird and thrush, that saluted us from every bush and thicket; and marking the early buds beginning to unfold on the hedge rows. A few sunny days had coaxed into greenness the woodbine, whose mantle of sad-coloured verdure was kindly flung across the leafless sprays of the hawthorn, and the naked branches of the youn g saplings, as if to shield them from the chilling gales of winter, while it sought support for its own weak, fragile stem.

The elder too had yielded to the same genial influence, and gave promise of returning spring. Though its leaves are of a sad colour, and somewhat coarse in texture, I love the elder. It is one of spring's earliest heralds; it tells of buds and blossoms yet to come: its broad umbels of white flowers give great effect to the closely wooded lane, standing forward among the lighter foliage in beautiful relief: it comes too when the blackthorn, the whitethorn, and crab-trees have shed their blossoms; and its rich clusters of ripe purple fruit in autumn look very imposing, and afford a pleasant beverage in winter for the poor, whose luxuries are so few; besides employing many women and children at that season gathering the berries for sale, which, when duly freed from the stalks, are sold at the rate of one shilling, or one shilling and fourpence per peck.

Beside the elder we noticed the gosling willow, here and there bursting its prison, and putting forth its downy head to view; and on a close inspeetion might be seen the delicate tassels of bright crimson that terminate the slender sprigs of the hazel bushes; while high above them, the powdery catkins, or male blos-

soms, wave gracefully to every passing breeze. Then there were early primroses, whose pale buds were just beginning to peep through the green calix that encompassed them; but these were only to be viewed at a respectful distance; they were beyond our reach, having been nursed up in the moss that lined the banks of the deep sheltered ditches; and we could only sigh to gain possession of them, and turn with grateful feelings towards the solitary varnished celandine, or white daisy, that courted our attention among the grass on the sunny side of the bank. The sight of this sweet, modest flower recalled Burn's Mountain Daisy—

Its snowy bosom sunward spread;

and Montgomery's sweet lines to the same meek child of nature:—

There is a flower, a little flower,
With silver crest and golden eye,
That welcomes every changing hour,
And weathers every sky.

The prouder beauties of the field,
In gay, but quick succession shine;
Race after race their honours yield:
They flourish and decline.

But this small flower to nature dear,
While moons and stars their courses run,
Wreathes the whole circle of the year,
Companion of the sun.

It smiles upon the lap of May,
To sultry August spreads its charms;
Light pale October on its way,
And twines December's arms.

The purple heath, the golden broom,
On moory mountains catch the gale;
O'er lawns the lily sheds perfume,
The violet in the vale;

But this bold flow'ret climbs the hill,
Hides in the forest, haunts the glen;
Plays on the margin of the rill,
Peeps round the foxes den.

The lambkin crops its crimson gem,
The wild bee murmurs on its breast;
The bluefly bends its pensile stem
Light o'er the skylark's nest.

'Tis Flora's page; in every place,
In every season, fresh and fair,
It opens with perennial grace,
And blossoms everywhere.

On waste and woodland, rock, and plain,
Its humble buds unheeded rise:
The rose is but a summer's reign;
The daisy never dies.

The exquisite simplicity and beauty of this little poem will be sufficient apology to my young readers for introducing it in this place. The daisy and celandine are the first wild flowers of any consequence that appear in our banks and lanes. The poet Wordsworth

has celebrated the latter, by some pretty lines addressed to the calandine, "the first flower that blows in spring" beginning,

> There is a flower that shall be mine,
> 'Tis the little calandine.

But I forbear inserting them at length.

Susanna and I were already anticipating the time when the hedges should have put on their gay livery once more, and the banks be bright with fresh green leaves and tender grass, embroidered with primroses, buttercups, violets, daisies, cowslips, and meadow saxifrage, that tall pensile flower that bears silvery white blossoms and pale slender green leaves; it comes in with blue-bells and violets, and may be seen on sunny banks and little thickets of underwood, raising its delicate, fragile stem, and opening its snowy bells to the spring sunshine.

The thought of spring and spring flowers made our young hearts dance with joyful anticipation, when, just at the same instant, we both espied a knot of full blown primroses, in a sheltered nook at the roots of a clump of tall holly trees, that grew on a pretty rising ground in the lane; which spot in spring and summer is always gay with furze and tufts of long yellow broom: beneath whose friendly covert many a pheasant's downy brood have been nursed up, from year to year, unmolested and unseen.

Eager to secure the prize as a present for mamma, we both hastened to the spot where the primroses grew; but on stooping to pluck the flowers, we discovered two tiny brown leverets, sheltered beneath the

long tufts of grass and leaves, nestled side by side, half perished by the chilling wind that waved the scanty foliage round them. The poor little things trembled in every limb; but whether from terror occasioned by our approach, or by the loud barking of a dog not far from the spot, I cannot determine.

Our natural affection for all kinds of animals prompted us to succour these little helpless creatures. We looked carefully round on every side, thinking, if we could discover any traces of their mother, we would deposit the little hares safely among the furze and bushes, and leave them to her fostering care; but no sign of her recent steps among the dewy grass appeared, and we conjectured that, in all probability, she had fallen a victim to a sportsman, whom we had passed at a turning in the lane, with a dead hare in his hand.

As the little orphans were evidently too young to provide for themselves, we resolved to take them home, and see what we could do for them. Carefully depositing them on a bed of soft dry moss, which we collected from the roots of the holly-tree, I placed them at the bottom of the little wicker basket I had in my hand. During our walk homewards we often lifted the lid of the basket, and peeped in on our little captives; but they appeared very insensible to their change of condition, remaining perfectly quiet, their little noses buried in the warm fur of their bosoms, and crouched closely together among the moss.

On reaching home we eagerly displayed our treasure, lifting them gently from the basket by their ears, sliding the other hand carefully under them at the same time, that we might not hurt the tender things.

And here let me pause, to observe that no animal requires to be more tenderly handled than a hare or rabbit. Some children take them up round the middle of the body, a very injurious practice. Others grasp them by the ears, and hold them dangling in the air, leaving the whole weight of the body to be thus sustained. This cannot fail of hurting the little creatures exceedingly. The most judiciuos method of lifting it appears to be gently raising it from the ground, and then supporting it on the hands or arms, unless an old basket-lid or box be at hand for placing them upon. Our little hares were so small, they would sit with ease on the palm of our hand without the smallest inconvenience.

Mamma and my sisters were quite delighted with our little foundlings, but expressed strong doubts as to the possibility of bringing them up, as they were evidently too young to eat any green food; being not more than a week old at farthest, though covered with a warm coat of thick, brown fur, and with eyes wide open. In this latter particular hares differ from rabbits, kittens, puppies, and many other of the inferior animals which come into the world blind. The young of the hare is furnished with warm clothing and quick sight from its birth; and this seems a necessary provision of nature, when we consider it is not nursed in a burrow in the ground, as the rabbit and the mouse tribe, but exposed to the inclemency of wintry seasons, sheltered only by the grass and herbage of the moorland-heath and copse; which would be but a scanty protection, did not nature provide it with suitable covering from the cold, and sight to give it warning of the danger to which it is constantly liable.

Susanna and I were not easily to be discouraged in our design of rearing our little hares, having formerly assisted in bringing up a litter of nine little grey rabbits, whose mother was killed by a cat when they were not more than eight days old. Our plan succeeded so well that not one of the number died; and as the manner in which we managed to rear them may prove useful to some of my young readers, I shall take the opportunity of introducing it in this place.

Having procured a saucer with a small portion of bran, we warmed some milk and poured over it; and when reduced to a warmth not exceeding that of new milk just taken from the cow, we proceeded to feed our little family; taking care to spread a coarse cloth over the table and on our laps, to prevent spoiling our frocks (a very needful precaution,) we took a little milk in a teaspoon, and placing the little rabbit under the hollow of our hand, so that its head came between the thumb and fore finger, to keep it steady and prevent its escape, we proceeded to feed it, insinuating the point of the spoon between the teeth of our nursling. At first the little rabbits were very refractory, turning round, drawing back their heads, and skipping through our fingers, rebelling sadly against this novel mode of receiving food; but after a few trials of patience, and a little perseverance, we induced them to receive the milk readily, and by the end of the fourth day they had become so docile, that they would voluntarily lick the milk from the teaspoon, and finally gather round the saucer, helping themselves freely to milk and bran, and without any further invitation, nibble a morsel of bread from our hands, or eat parsley or any other tender herb we chose to offer them.

With such encouragement to persevere, no wonder if we entertained lively hopes respecting our young leverets. Without further delay we set about feeding Tots and Browny, for so we named our adopted favourites, but not without many remonstrances on their parts. Never having been accustomed to be served out of silver, the little hares did not seem to know what to make of these shining pap-boats, which we so unceremoniously forced between their teeth, and many were the attempts they made to escape from our hands; but generally speaking, they evinced their displeasure by preserving a sullen and stupid demeanour.

Perseverance will overcome many difficulties, and we had at length the satisfaction of perceiving Browny beginning to suck the milk from the spoon, and Tots soon followed his sister's worthy example, and several teaspoonfuls were demolished to our delight. I must however notice, that part of the milk was spilled on their breasts, which circumstance sadly distressed the cleanly creatures. Their first movement, when released from our laps, was that of washing their breasts and feet, till they had reduced the refractory fur to a tolerable degree of smoothness.

The difference in character between these two little hares was very decided. Though by far the smallest, and more weakly of the two, Browny was the more lively and engaging: her love of order formed a striking feature in her disposition. As soon as the *tidy* little thing (to use an expressive provincial term) had carefully cleaned her own fur, she would go to her companion, and diligently assist in recomposing his ruffled coat, licking his head, ears, breast and back, with the greatest care and tenderness, which good

office Tots never considered incumbent on him to perform in return; a want of gratitude that served to endear Browny the more to me, though Tots had been the object of my more peculiar care. Browny was not only more cleanly in her general habits, but of a more docile and tractable temper, and soon learned to ingratiate herself, by licking our hands, and greeting us with various tokens of regard.

After having fed our little nursling, our next care was to prepare them a habitation, and a commodious wooden box was soon selected from the lumber-yard, into which, having comfortably lined it with soft hay and moss, we introduced our little hares; and as the night promised to be cold, they were permitted to remain in a distant corner of the school-room; an indulgence for which we were very grateful, as it gave us an opportunity of watching all their manœuvres, which were of a most amusing description.

As night drew on, these little creatures, which had before appeared so sullen and mopish, seemed to awaken into life and glee. Without betraying the smallest dread of our persons, they skipped about, playing a thousand wanton and gamesome tricks; leaping over one another, racing and chacing all over the room like two lively kittens. Then, when tired with these exertions, they would sit down, side by side, as demurely as possible; nestling closely together, licking each others ears and noses with the most caressing affection; then separating, they would make the tour of the room, examining every object with minute scrutiny and apparent curiosity. They seemed mightily well pleased with the gay hearth-rug; and having attentively examined it, came and squatted

down in front of the fender, or seated themselves on the hem of one of our frocks, without the least apprehension of danger. They were, in fact, the most innocent and engaging little animals you could imagine. When they ran, they perched up their ears, (which at other times laid flat to their heads,) and sprang forward with a sort of bound, sometimes cutting the most comical capers sideways. These little creatures became so much attached to us, that if we only moved across the room, they would run after us, skipping across our path, and raising themselves on their hinder feet, as if to solicit our regard. One of Browny's favourite seats was between my feet, as I sat before the fire of an evening, when she amused herself by nibbling my shoe-ribbons, or biting the hem of my gown; but these frolics were only of an evening. During the day they kept closely together in their box under the hay, and never moved, or appeared to take the least interest in any thing that was going forward; but as soon as the daylight disappeared, and dusk came on, their spirits revived, and they became exceedingly lively and entertaining.

Somewhat surprised at this peculiarity, I applied to our gardener, who was a sort of factorum, and knew a little of almost every thing, and had made some observation on such things as came under his eye, for information on the subject; and he told me thatnot only hares, but many other animals, in a wild state, came out to feed and enjoy themselves of a night, keeping close during the day, or only going out for food. He told me the old hares leave their young ones in some sheltered form, which is the place in which she sits, and is often absent for some hours together, only returning

once or twice to suckle them; but as soon as night approaches, she leads her little ones forth to some pleasant place, where they frolic and enjoy themselves in the moonlight, on the open common, high pastures, or among the dewy corn till sunrise, when they again betake themselves home, to dose away the remainder of the day till evening comes again.

It is commonly affirmed that hares sleep with their eyes open, because no one has been able to catch them napping with them closed. Owing to their quickness of hearing, they are awakened by the most distant sound; so that before the approach of the intruder, the hare is roused. The eye of the hare is so globular, that the rays of light strike on it from all surrounding objects, whether behind or before. This is a valuable provision towards her security, as she both hears and sees the approach of her enemies, of which she has an infinite number, before they are near enough to molest her. I shall, however, reserve such remarks and information as I have been enabled to collect from Buffon and other naturalists, to subjoin at the end of the chapter, and proceed to relate what little remains to be said of my two pets, Tots and Browny.

I regret to say, Tots was found dead one morning in his box. I have the idea his death was occasioned by giving his milk too warm, or the air of the closely shut up room was not proper for an animal accustomed to live abroad in all weathers; or, more probably, he required some food we were unable to procure for him. Perhaps our little Tots died the death of many other favourites, from over kindness. We missed his innocent, merry gambols with his sister Browny of a

night, on the carpet or beside the fire. Browny we determined to remove to a more airy situation, better suited to her former habits of life; and as she could now eat green food, mamma kindly allowed the gardener to fit up a convenient box, nicely wired in front, in a corner of the rabbit house; and having bored some holes in the bottom of this new house, that it might be kept perfectly dry, we sifted some clean white sand at the bottom of it, according to the advice of Cowper the poet, and supplied our little favourite with such diet as we thought most proper, not giving her the food in too great quantities at a time. In our treatment of our little hare we were glad to be guided by the experience of Cowper, who has given a very interesting account of three tame hares he brought up—Puss, Bess, and Tiney; and which little memoir I would recommend to the perusal of my young readers, as it contains many circumstances likely to afford at once amusement and instruction.

The food we gave Browny, who now became a sort of partnership concern between Susanna and me, was carrots, lettuce, the leaves of cabbages of every description, sowthistle, dandelion, endive, groundsel, the twigs of sweetbriar, hawthorn, and of the birch-tree, clover, fresh hay, the blades, and indeed the ears, and even the straw of corn, winter tares, peas, and bran, became by turns the food of Browny. She would readily take bits of bread from our hands, and several sorts of fruit; apple-parings she would eat, and the tendrils and leaves of the grape-vine she rather coveted, but soon grew tired of them. All kinds of pinks and carnations she readily ate; but these being costly dainties, it was only now and then, just by way of a

treat, we ventured to crib a leaf or sly offset, from some old and valueless pink or clove, from a distant parterre. The leaves of the flower, commonly called Michaelmas-daisy, she seldom refused. Potatoes, especially the root, she seemed to care little for. Swedish turnip she ate readily, and such weeds as were of a bitter, milky nature, she seemed to hold in great esteem.

Browny became so much attached to me, that she would distinguish me from my other sister, lick my hands, and rear up against the wires of her box at my approach, and testify her pleasure at the sight of me by many silent caresses. As we could not enjoy much of her company in the rabbit-house of an evening, the time when she was most entertaining, we were sometimes allowed to bring her into our play-room, that we might see her tricks before we went to bed.

Browny always evinced considerable pleasure while listening to music. When practising our music, she used to be particularly attentive. A lively air, not too loud, appeared greatly to interest her: she would pause in her gambols, erect her ears, raise herself on her hind feet, and listen attentively, expressing her satisfaction by a low drumming noise.

Sometimes, when much excited, she would spring into my lap, look earnestly in my face, as though silently demanding an explanation of the sounds that pleased her so well. I have noticed a love of music in several animals. One of my dormice evinced the most lively pleasure on being placed on my knee, while my cousin played an air on the violin. My sister Jane had a black kitten which was also very fond of music. Passing through a field one summer's

evening, when a flock of sheep were feeding, I could not help observing the behaviour of a ram with a bell tied to his neck. The church bells, from a neighbouring village, were ringing merrily. The animal stood for some time motionless, his head turned in the direction from whence the sound came: he then shook his head, which caused the bell he carried about him to sound. This seemed to arouse a desire of emulation in him. He continued alternately pausing, to listen; then shaking his bell with violence, evidently delighted at the music he produced. Some dogs are capable of distinguishing tunes. The hare has been remarked by many persons for its predilection to sweet sounds, and has been even taught to beat the tabor.

The only trick we succeeded in teaching Browny, was leaping over our hands, or a stick, when held at a considerable distance from the ground. This she would perform seven or eight times successively, and seemed to take delight in these feats of agility. She would also rise on her hind legs, rub her soft brown head against our hands, and lick our fingers, when we stooped to caress her.

Browny lived with us very happily for nearly two years. I regret to say, her death was one of a very tragical nature. A weasel, that had haunted our garden-hedge for several days, found means to insinuate his narrow head between the wires of the box, and killed our poor hare. One morning, when Alice, mamma's maid, came to call Susanna and me, she related, with tears in her eyes, the melancholy catastrophe which had happened to our beloved Browny. This doleful news caused us both abundant weeping.

Thus died, in the flower of her age, our poor Browny.

Susanna mitigated her grief by composing an epitaph for her deceased favourite, which we interred with all due ceremony, beneath the mulberry-tree at the bottom of the garden; planting flowers round the grave, and placing a stone at each end, to mark the spot of interment, which remained unmolested for several years, till another gardener came, who had never heard of Browny, and dug round the mulberry, to give its roots manure, and utterly destroyed all trace of the grave of our lamented little hare.

I SHALL now add a few particulars, collected from different authors that I have consulted, on the natural history of this little quadruped.

The hare is distinguished by the generic name of *lepus*. It is a native of almost every country in Europe, and, indeed, of all the temperate and cold parts of the world. The young are brought forth fully clothed with a thick covering of warm, soft fur. They are not blind, like most of the smaller quadrupeds, but enjoy sight from the very day they come into the world. The hare does not burrow like the rabbit and many other animals, but sits on the ground, in what is termed her form; choosing a southerly aspect in winter, a northerly one in summer. She suckles her young twenty days, after which period she leaves them to shift for themselves. These animals inherit a strong attachment to place, seldom abandoning the form they have once chosen, returning to it after having been pursued many miles by the hunters. In their general habits they are solitary, each one occupying its own peculiar seat, but the members of one litter seldom remove far from one another. If a young

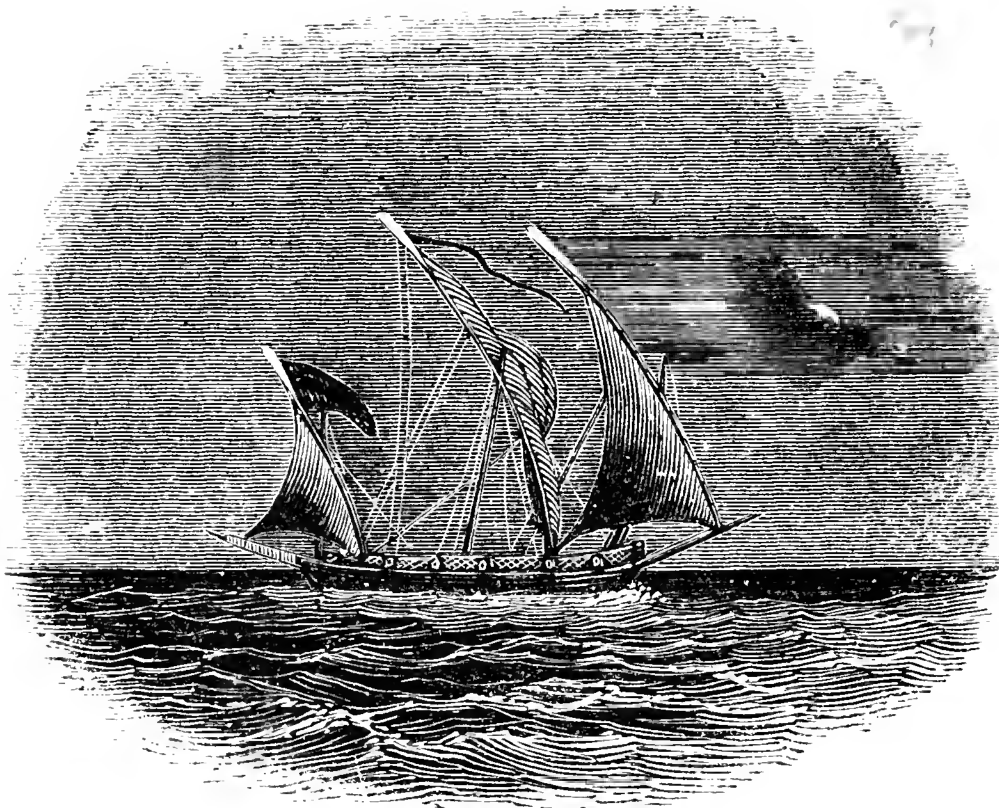
hare is found in her form, you may generally conclude there are others not far from her. The natural life of a hare is from eight to nine years, but one of Cowper's hares lived to be eleven years and eleven months old.

This inoffensive creature has so many foes to contend with, that it seldom, if ever reaches the natural term of its existence.

In polar countries the hare charges its tawny or russet coat for one of silvery whiteness. This seems to be provided by the benevolent author of nature as a means of self-defence for eluding the vigilance of its enemies, who are not so well able to distinguish it from the snow-covered ground over which it moves.

The hare, guided by that peculiar instinct which has been as aptly as beautifully termed, by a modern writer of some eminence, "God's gift to the weak," chooses her retreat where the surrounding objects are of a similar colour with her own russet coat. The fallow fields, the brown heath, or beds of withered fern, among decayed leaves, and sheltering underwood, she makes her form; and though the most defenceless and timid of all animals, instinct supplies her with means of security, which, if it displays little courage, shows a sagacity which courage alone could not have supplied.

When sorely pressed by pursuing hounds, she will oftentimes start another hare from her form, and lie down in it herself, thus diverting the danger by presenting a new object for pursuit. Sometimes she will commit herself to the watery element, crossing a river or ditch several times successively; by which means the dogs often lose the scent, and she eludes their vigilance. Various are the stratagems adopted by this



St. Elmo's Light.

Indians and the Boa Constrictor.

little creature for securing herself: sometimes she has been known to leap to the top of a wall or ruined building, and squat down among the long grass and weeds, and even venture into the abodes of her enemy, man; or not unfrequently, with admirable sagacity, find refuge under the door of the sheep-cote, and mingle with the flock, as if conscious that here she was safe from pursuit, making the weakness of the timid sheep her bulwark of defence.

Having attained a place of security like this, no vigilance can force her to abandon it. Hares are alike the prey of man and beast, and even of insects, which torment them exceedingly, and often force them to abandon their form, and choose a distant retreat less exposed to their attacks.

Hares chew the cud, and part the upper lip, which they keep in constant motion: they seldom utter any sound, unless in pain or sudden peril, when their cry is sharp, piercing, and expressive of agony. They are considered unclean by the Jews, and are among the animals forbidden by the Mosaical law.

CHAPTER XVIII.

St. Elmo's Light.

It is astonishing how much science has done, in the course of a few years, towards removing some of the most superstitious fancies which the human mind has entertained; and not unreasonably entertained either, and scarcely superstitiously—for when, without any manifest cause, an appearance exactly the reverse of

all our preconceived notions of possibility takes place, when every thing connected with such appearance seems to indicate its reality, and yet every circumstance connected with that appearance indicating that nothing material can be possibly connected with it, who does not feel a degree of awe and terror? Science has performed invaluable service for man by removing the cause of his apprehension and alarm, and assigning a reason for those appearances which seemed to be beyond the bounds of the material creation. The feelings with which our fathers beheld these visions, are evident from the names they yet bear; they are nearly all characterized by names which indicate their belief in their supernatural origin. If we had to thank science for nothing more than this, that she has torn down the veil of mystery which hung over nature's most glorious and beautiful works, bidding us gaze on the vast machinery by which she works, she would amply have merited our gratitude, but at the same time she shows us miracles, which far outstrip the mere supernatural appearance, daily and hourly performed around us. The peasant returning from a day of toil and labour, was struck with deadly wonder as he saw the Aurora in the skies. The mariner on the deep, felt his stout heart fail him as he saw the light of St. Elmo glancing on the masts of his vessel; or perhaps beheld another vessel suspended in the air. The traveller naturally viewed with terror the apparition of himself, or of some of his race, imitating his every motion, on some opposite cliff or mountain: but now, rather than dread with horror and apprehension such spectacles, we should hail them as strikingly

illustrative of the mystery and beauty of nature's every work. If we looked nature through attentively, we should find in every object on which our eye rested, *something* which would be to us as mysterious as the strange forms painted on the evening sky. Every star flashes mystery in its fires; every flower breathes mystery in its perfumes; every wind speaks mystery in its harpings; every man is a mystery in his formation. The only reason that they are not considered mysteries is because their appearance is regular, and the appearance of those counted mysterious is erratic.

Amongst the various atmospherical illusions which have been observed, that of St. Elmo's light, is one of the most remarkable. It is a luminous meteor which frequently settles on the mast-head of vessels, and is so called, because it is supposed to be a visible representation of the sailor's tutelary deity, styled St. Elmo. When it is confined to the topmast of the vessel it is supposed to prognosticate bad weather, but no injury to the ship in consequence; but when it descends the mast, it is a proof that a heavy gale will rise, and that the vessel is in danger, and that, in proportion to the depth of its descent. The phenomenon observed by M. Allamand, in the canton of Neufchatel, may probably be attributed to the same cause. As this gentleman was walking from Fleurie to Montiers, he was overtaken by a thunder storm. Having closed his umbrella lest the electricity should be attracted by its metallic point, he saw that the rim of his hat was surrounded by a band of light, which became more intense when he passed his hand over it. This appearance vanished as soon as he came near some tall

trees, which in all probability conducted away the electricity from the highly excited atmosphere. The appearances arising from the atmosphere are however too numerous to be described. Many a benighted traveller has been led far over the wild moors and morasses by Will-with-the-wisp,—

> The wandering fire,
> Hovering and blazing with delusive light,
> Misleads the amazed night wanderer from his way,
> To bogs and mires, and oft through pond or pool,
> There swallowed up and lost, from succour far.

What legends are associated with all the lakes of Ireland from the bright scintillations which dart from their mist. The story of O'Donoughoo, who haunts the lakes of Killarney, is well known to all the lovers of the marvellous. O'Donoughoo was a celebrated chieftain who possessed the art of magic. Being strongly solicited by his lady to give her some proof of his skill, he assumed the shape of a demon, and, her courage failing, he suffered for his temerity, and disappeared. Ever since he has been accustomed to ride over the lake on a horse shod with silver, his punishment being to continue that monotonous exercise until the shoes are worn out. On the morning of the 1st of May, thousands assemble round the lake to see him, and there can be no doubt that the figure which has been witnessed by credible travellers, is the reflection of a man on horseback riding on the shore.

These are a few of those atmospherical illusions, which for so long a period of time were the vassals of super-

stition and fancy to the ignorant; in every age they have presented an aspect of terror and alarm; science breaks the gloom, and throws a glory, majestic and beautiful, over what before was, with all its brilliancy, dark and awful. We shrink not from the appearances now; we regret that they are so few and far between! What an aspect of life is thrown over them. The traveller in the desert, panting with thirst, wearied and almost ready to lie down and die, rouses the last spark of life within him, as he sees at no great distance the columns and the domes of a vast city reposing in the sunlight, spring as it were by enchantment before his eyes; and after toiling on, with the full sun on his brow, and reaching no city, which ever mocks his eager pursuit, and at last flits from his vision, he drops and dies. It was but a mirage! it fell as quickly as it rose.

The Boa Constrictor, &c.

THE BOA is the name of a family serpents which are without venom, the abscense of which is amply compensated by immense mascular power; and a celebrated author has given the following vivid account of this large and dangerous reptile:—" A friend of mine sent to inform me that one of these reptiles had just cast his skin; at which period they, in common with most other serpents, are more active and eager for prey. Accordingly I, in common with some other friends, repaired to the menagerie, where we found a spacious cage, the

floor of which consisted of a tin case, covered with red baise and filled with warm water, so as to produce a proper temperature. There was the snake gracefully examining the height and extent of his prison, as he raised, apparently without any effort, his towering head to the roof and other parts of it, full of life, and brandishing his tongue. A large buck rabbit was introduced into the cage. The snake was down and motionless in a moment. There he lay like a log, without one symptom of life, save that which glared in the small bright eye twinkling in his depressed head. The rabbit appeared to take no notice of him, but presently began to walk about the cage. The snake suddenly, but almost imperceptibly, turned his head, according to the rabbit's movements, as if to keep the object within range of his eye. At length the rabbit, totally unconscious of his situation, approached his ambushed head. The snake darted at him like lightning. There was a blow—a scream—and instantly the victim was in the coils of the serpent. At one instant the snake was motionless,—in the next he was one congerie of coils round his prey. He had seized the rabbit by the neck, just under the ear, and was evidently exerting the strongest pressure round the thorax of the quadruped, thereby preventing the expansion of the chest, and at the same time depriving the anterior extremities of motion. The rabbit never cried after the first seizure. He lay with his hind legs stretched out, still breathing with difficulty, as could be seen by the motion of his flanks. Presently he made a desperate struggle with his hind legs: but the snake cautiously applied another coil, with such dexterity as completely to manacle the lower extremities,

and in eight minutes the rabbit was quite dead. The snake then gradually and carefully uncoiled himself; and, finding that his victim moved not, opened his mouth, let go his hold, and placed his head opposite to the fore part of the rabbit. The boa generally, I have observed, begins with the head; but in this instance the serpent, having begun with the fore legs, was longer in gorging his prey than usual; and, in consequence of the difficulty presented by the awkward situation of the rabbit, the dilatation and secretion of the lubricating mucus were excessive. The serpent first got the fore legs into his mouth: he then coiled himself round the rabbit, and appeared to draw out the dead body through his folds. He then began to dilate his jaws; and, holding the rabbit firmly in a coil, as a point of resistance, appeared to exercise, at intervals, the whole of his anterior muscles in protruding his stretched jaws and lubricated mouth and throat, at first against, and, soon after, gradually upon and over, his prey. This curious mechanism in the jaws of serpents, which enables them to swallow bodies so disproportioned to their apparent bulk, is too well known to need description.

"When the prey was completely engulphed, the serpent lay for a few moments with his dislocated jaws still dropping with the mucus which had embrocated the parts, and at this time he looked sufficiently disgusting. He then stetched out his neck, and at the same moment the muscles semeed to push the prey further downwards. After a few efforts to replace the parts, the jaws appeared much the same as they did previous to the monstrous repast."

The Rev. Lansdowne Guilding thus records the

capability of the boa to cross the seas: "A noble specimen of the boa constrictor was lately conveyed to us by the currents, twisted round the trunk of a large sound cedar tree which had probably been washed out of the bank by the floods of some great South American river, while its huge folds hung on the branches as it waited for its prey. The monster was fortunately destroyed, after killing a few sheep; and his skeleton now hangs before me in my study, putting me in mind how much reason I might have had to fear in my future rambles through St. Vincent, had this formidable reptile been successful in making its escape to a safe retreat."

The RATTLE-SNAKE is one of the most important, and perhaps we may say best known, of the serpent tribe. Men or animals bit by this venomous snake, expire in extreme agony; the tongue swells to an enormous size, the blood turns black, and all the extremities becoming cold, gangrene ensues, and is speedily followed by death. A farmer was one day mowing with his negroes, when he accidentally trod on a rattle-snake, which immediately turned upon him and bit his boot. At night when he went to bed he was attacked with sickness, and before a physician could be called in, he died. All his neighbours were surprised at his sudden death, but the body was interred without examination. A few days after, one of the sons put on the father's boots, and at night when he pulled them off he was seized with the same symptoms, and died on the following morning. The physician arrived; and, unable to divine the cause of so singular a disorder, seriously pronounced both the father and the son to have been bewitched. At the

sale of the effects, a neighbour purchased the boots, and on putting them on experienced the same dreadful symptoms. A skilful surgeon however being sent for, who had heard of the foregoing accidents, suspected the caûse, and by applying proper remedies recovered the patient. The fatal boots were now carefully examined, and the two fangs of the snake were discovered to have been left in the leather with the poison fang adhering to them; they had penetrated entirely through, and both father and son had imperceptibly scratched themselves with the point in pulling off his boots.

The existence of the Great Sea-Serpent, while affirmed and maintained by many, has by the majority of naturalists been doubted until very lately. The evidence, however, is at the present moment so voluminous, that, although the habits and history of the animal remain in perfect obscurity, it cannot be even momentarily supposed that it does not exist. We shall, therefore, quote various authenticated testimonies respecting this singular inhabitant of the mighty deep.

The first is an account of an animal stranded in the island of Stronsa, one of the Orkneys, in the year 1808, and which was first seen entire, and measured by respectable individuals, and afterwards, when dead and broken to pieces by the violence of the waves, was examined, by many portions of it being secured, such as the skull, and upper bones of the swimming paws, by Mr. Laing, a neighbouring proprietor, and other portions, such as the vertebræ, etc., by being deposited and beautifully preserved in the Royal Museum of the University of Edinburgh, and in the Museum of the Royal College of Surgeons. An able paper on these

latter fragments, and on the wreck of the animal, was read by the late Dr. Barclay to the Wernerian Society, and will be found in volume I. of its Transactions. It appears that the animal measured fifty-six feet in length and twelve in circumference. The head was small, not being a foot in length from the snout to the first vertebræ; the neck was slender, extending to the length of fifteen feet. All authorities agree in assigning to it blow-holes, though they differ as to the situation. On the shoulders something like a bristly wave commenced, which extended to near the extremity of the tail. It had three pairs of fins or paws connected with the body; the anterior were the largest, measuring more than four feet in length, and their extremities were something like toes partially webbed. The skin was smooth, without scales, and of a greyish colour, and the flesh apparently like coarse or ill-coloured beef. The eye was the size of the seal's, and the throat was too small to admit the hand.

"I saw the animal," writes Mr. Maclean, to a friend, "of which you inquire. Rowing along the coast of Coll, I observed at about the distance of half a mile, an object to windward, which gradually excited astonishment. At first view it appeared like a small rock, but knowing that there was no rock in that situation, I fixed my eyes closely upon it. Then I saw it elevated considerably above the level of the sea, and after a slow movement distinctly perceived one of its eyes; alarmed at the unusual appearance and magnitude of the animal, I steered so as to be at no great distance from the shore; when nearly in a line between it and the shore, the monster directing its head, which still continued above water, towards us, plunged violently under water. Certain that he was in chase

of us, we plied hard to get a shore; just as we leapt out on a rock, and had taken a station as high as we conveniently could, we saw it coming rapidly under water towards the stern of our boat. When within a few yards of it, finding the water shallow, it raised its monstrous head above water, and by a winding course got with apparent difficulty clear of the creek where our boat lay, and where the monster seemed in danger of being embayed. It continued to move off, with its head above water and with the wind, for about half a mile, before we lost sight of it. Its head was somewhat broad, and of a form somewhat oval; its neck somewhat smaller; its shoulders, if I can so term them, considerably broader, and thence it tapered towards the tail, which last it kept pretty low in the water, so that a view of it could not be taken so distinctly as I wished; it had no fins that I could perceive, and seemed to me to move progressively up and down. Its length I believed to be between seventy and eighty feet; when nearest to me, it did not raise its head wholly above water, so that the neck being under water, I could perceive no shining filaments thereon, if it had any. Its progressive motion under water I took to be very rapid. About the time I saw it, it was seen near the Isle of Canna; the crews of thirteen fishing boats, I am told, were so much terrified at its appearance, that they in a body fled from it to the nearest creek for safety. On the passage from Ruen to Canna, the crew of one boat saw it coming towards them with the wind, and its head high above water. One of the crew pronounced its head as large as a little boat, and its eye as large as a plate. The men were much terrified, but the monster offered them no molestation."

CHAPTER XIX.

All children love hearing or reading stories or anecdotes of monkeys. For my own part I must confess, nothing delighted me more when a child, than listening to monkey stories; and when a little older, and I was able to read for myself, I greatly relished the amusing anecdotes related of those droll animals, by the ingenious author of "Sandford and Merton."

Papa's monkey was presented to him by the captain of a merchant-vessel, who brought Ned (for so he was named) from the island of Ceylon, where monkeys used once to be held in such high estimation by the natives, that they even regarded them as objects worthy of adoration and worship; so blind and foolish is human nature, unenlightened by the truths of revelation, which teach us that God is a spirit, and to be worshipped in spirit and in truth. And all other things, whether animate or inanimate, are the works of his creative power, and that to pay homage to them, is to exalt the creature above the Creator, which constitutes *idolatry*, and robs the Almighty of the honour due unto his name.

Ned was of the same class with those common monkeys that may be seen in the streets of London, or at fairs and wakes, sitting on the tops of Italian boys' organs, figuring away on the backs of French poodles, or dancing quadrilles, dressed in red jackets and fur caps; or fastened by a long chain to the collar of some patient camel, or that much injured animal, a dancing bear, whom they often sadly annoy by their

apish tricks. Ned might, with these monkeys, be described as being of a dusky, greyish brown colour, mixed with rusty yellow; naked face, ears, and hands; the forehead much wrinkled; inquisitive, round eyes: the hair rather long, of a dirtyish brown, parted down the middle of the head on either side. Like the rest of his species, he was much addicted to mischief, which propensity he indulged whenever any opportunity offered of putting it in practice.

He always displayed great reluctance at being washed, which necessary act of cleanliness he was made to perform at least twice a-day.

One day Ned observed the shoe-boy very busily engaged blacking his master's boots; and fancying the boots looked very much improved by the operation, and that he required some embellishment of the kind to set him off to advantage, he watched his opportunity, and dipping the brush into the liquid, blacked his feet and half way up his legs; and then being charmed with the effect produced by his application of the blacking, he next applied the brushes to his face and hands, wiping his fingers from time to time on his head; and a pretty figure he made of himself, as you may easily imagine. He was still in the midst of his frolic, when, alas for the poor painter! his unusual chattering and notes of approbation attracted his master's notice, who just then chanced to come that way, and quickly put an end to his employment, by ordering the servant to catch him and bring him to the kitchen, where he caused a small tub of water to be set before the culprit, with a piece of flannel and soap, and commanded the weeping monkey to wash himself instantly. With much reluctance, and

the most ludicrous expressions of regret, the poor monkey proceeded to perform his ablutions, wringing his hands and casting the most rueful glances, first at his master, then at the cold element: at length, taking the flannel, he dipped it into the water, soaped it, and applied it to his face. No sooner had the cold fluid touched him, than he renewed his lamentations, casting the most imploring looks of entreaty on his master; but there was no reprieve. When he had thoroughly cleaned himself, he was permitted the use of a towel. This indulgence he received with evident delight, skipping joyfully about with it in his hand, and making the most diverting grimaces while he applied it to his hands and face.

Ned had a little house to sleep in, with a small pillow, and a rug to cover himself with: monkeys being the natives of tropical countries, require artificial warmth to keep them in health.

This house stood in a warm nook of the kitchen, and it formed one of Ned's chief employments to drag his house as close to the fire as his strength would permit, and make up his bed. This he would do twenty times before he settled to sleep, putting off the covering, shaking up his pillow, then lying down, to try if it was easy and comfortable. To render his bed more soft, he would convey to it all sorts of rags, or any article of wearing apparel he could conveniently purloin. Any careless person who left silk handkerchiefs, gloves, caps, or frills in Ned's way, never saw them again; at least not in a wearable state, as he cut them to pieces with his sharp teeth, tearing them to bits.

Time will not permit me to relate all his pranks:

how he would hide up the maids' aprons and pattens, and the footman's knives and shoes; or how he stole my grandfather's wig that the hair-dresser had just sent home in full dress, and having paraded about in it for some time, finally skipped into the tall cherry tree opposite the parlour window, and hung it on the topmost bough, to answer the purpose of a scarecrow. Ned delighted in teasing papa's tame owl, that lived in the dark corner of the summer-house in the garden; and would bring it from its cool, shady retreat, and place it on the gravel walk in the full blaze of a meridian sunshine; appearing greatly to enjoy the evident discomfiture of the poor bird. Sometimes, however, he received a severe peck from the owl's strong beak, or a flap with her wing in his face, that somewhat disconcerted him. Of an evening he kept at a respectful distance, for experience taught him that he could not meddle with his feathered adversary with impunity. Besides teasing the owl, he persecuted papa's squirrel; and besides taking every opportunity of waking him, when the pretty innocent thing was enjoying a comfortable nap, he would run to his case, put his paw through the bars, and steal his nuts or biscuit, throwing back the shells with the most impertinent freedom.

These and many other tricks I could tell you, but shall confine myself to one or two of the most remarkable of his pranks.

A few doors off from my father's house lived a rich maiden lady, with whom Ned had contracted some degree of friendship. This lady often sent for Ned to entertain her with his tricks, and rewarded him with a profusion of cakes and sweetmeats in return

for his drollery; and Ned, who knew where he was well treated, often paid a visit of his own accord, for he was a very cunning fellow.

Now, this lady had been given a fine lemon-crested cockatoo, a bird of extraordinary beauty, and who could repeat a few unintelligible sentences, which passed for talking. The bird could certainly pronounce its own name very distinctly, and would walk about the house, tossing its head, and squalling out in a shrill tone, "Pretty cockatoo! pretty cockatoo!" and some odd sounds, which those persons who professed to be skilled in parrot and cockatoo dialect, interpreted very clearly to mean, "How do you do? how do you do?" and "Very well I thank you." Well, this cockatoo was made a great fuss about, and all the lady's friends and acquaintance were invited to see and hear it, till they must have been tired of the poor bird's very name.

It so happened that this famous cockatoo met with an accident, and hurt its head. I rather think a neighbour's paroquet broke from its cage, and paid a visit to the garden where the cockatoo lived, and in a fit of ill-humour pulled out some of his best crest feathers, and left a sad bare place on his head. Be it how it may, the cockatoo had a sore head, and his mistress was assured the best way of curing it, was simply immersing the bird several times a-day in cold spring water. One morning, while this operation was being performed, Ned made his entrance at an open window into the house, and taking his seat on the sill of the window, appeared infinitely delighted with watching the whole proceeding, especially enjoying the resistance made by the poor cockatoo, who by no

means seemed to relish the immersion of his head in the water.

A visitor unexpectedly coming in, the cockatoo's mistress was summoned away, and Ned was left sole guardian of the sick bird. No sooner was the door closed, when this mischievous animal, resolving to take his turn in dipping the cockatoo, began chasing him about the room, and finally having hunted him into a corner, clutched him by one of his wings and dragged him, in spite of his resistance and complaints, to the tub of water, into which he dipped his head repeatedly, threatening, scolding, and even beating his unfortunate prisoner into submission; and finally held his head so long under water, that the poor cockatoo was drowned.

Hearing a strange confusion, the lady hastened to the scene of action, just time enough to witness the last struggles of her beloved bird, her fine lemon-crested cockatoo! Before she had time to inflict any punishment on the offender, he had dexterously effected his escape through the open window. For this misdemeanour he was well whipped and kept chained for a month. He seemed perfectly aware of his offence, for he never went into the house of his offended friend again; but evidently considered her as the author of his wrongs, for when she chanced to call on papa, if he was in the parlour he would run up the window-curtain, and secrete himself among its folds, chattering, scolding, and threatening, when sufficiently beyond her reach.

His last piece of mischief was something on a par with the murder of the poor cockatoo. My aunt Jane, who kept papa's house at that time, had two kittens,

Sprightly and Venus. Sprightly was a lively kitten, as white as snow, and as full of frolic and fun as any kitten could well be; while her sister Venus was a grave, sober little puss, who passed all her time in dosing before the fire; she was, moreover, rather a cross kitten, and would draw up her back, dart out her claws, and run away under some distant chair or table, if any thing approached to molest or disturb her slumbers. Ned, who was a beast of some discrimination, attached himself particularly to Sprightly: would nurse and dandle her in his arms, carry her about the room on his back, and suffer her in her turn to make very free with him. But no such friendship existed between Venus and him; she resented the least freedom on his part with indignation, growling and spitting whenever he came near the corner where she usually sat beside the fire. This mode of proceeding greatly incensed Ned, and he adopted a system of persecution against this poor kitten that served to increase their mutual antipathy towards each other. If Venus scratched and bit him, making use of ill-language, which in cats people term swearing, Ned repaid her by pinching her ears and tail, pulling her fur with his long, lean fingers, and twitching her nice whiskers whenever he could do so with impunity.

One day, however, he happened to find poor Venus enjoying a comfortable nap on his bed, whither she had crept for the sake of the warmth. The cook had just placed a saucepan of water on the side of the fire, in which she was about to boil some French beans for dinner; the lid was off, and this wicked monkey, without more ado, clutched the poor sleeping kitten, and popping her into the saucepan, put on the lid,

and scampering into his house, laid himself down on his bed, and affected to be fast asleep.

The servant, who had only been absent a few ninutes, was surprised at the pitiful sounds that saluted her ears on her approach to the fire; nor could she imagine from whence they proceeded, till having occasion to move the saucepan while she stirred the fire, she felt an unusual motion within it, and taking off the lid, perceived the half-drowned kitten, which presented a most melancholy spectacle, as it raised its head from the interior of the pot, and shook its wet ears with a rueful look and mewings of the most melancholy description, as if to be released from its watery prison: fortunately the water was cold, so poor puss was saved from a cruel death by the timely interference of the cook-maid.

This was the last trick Ned ever played while in papa's possession, for my aunt Jane was so indignant at his treatment of her poor litttle puss, which she by no means desired to have served up to table as kitten-broth, that she entreated her brother to give away this cruel monkey. This request he complied with, and presented Ned to a lady, who consented to receive him, in spite of his bad character for drowning cockatoos, and stewing young kittens.

Improbable as this circumstance may appear, it is nevertheless strictly true, and deserves to be recorded as an additional proof, if such be wanting, of the singular propensity towards mischief that exists in these animals; and as it tends to confirm the opinions of some modern writers, that animals of the higher order possess some reflective faculties, in addition to that instinct which governs their general habits and con-

duct. This reflection, however, appears limited within a very narrow compass, when compared with the reasoning powers of man, and is only occasionally exercised. Those animals in which it appears most conspicuous are—the elephant, the ape tribe, the dog, and the horse, Many interesting and wonderful anecdotes might be related of each of these creatures, in confirmation of their superior intelligence; but as they would most likely be familiar to my readers, I shall forbear inserting them.

So much has been written by celebrated travellers and naturalists on the history of monkeys, that I shall forbear enumerating the variety of the species, or pausing to repeat any of the marvellous tales related of them.

In its formation the larger animals of the ape tribe are said to approach nearer to man than any other: their powers of imitation are very lively; but while they voluntarily copy the actions of men, they seem incapable of inventing any thing by the exertions of their own mental powers. They are imitative, but not inventive.

The ape tribe, of which the monkey forms the third in degree, is divided into four species:—ape, baboons, monkeys, and sapajons. They are inhabitants of the torrid zone, are to be met with in most parts of Africa, India, China, Japan, South America, and many of the islands in the hot latitudes.

They feed chiefly on fruits, vegetables, corn, eggs, and the like; and occasion much mischief by their destructive and wasteful habits, infesting the fields of rice and maize, and committing great depredations in the gardens and orchards that chance to be near their native woods and places of resort.

CHAPTER XX.

Some years ago my sister Sarah and I were on a visit at the house of a widow lady, residing in a delightful part of Norfolk, where the country is divided from that of Suffolk by the river Waveney. During our stay at C—— park, we received an invitation to spend a day with a young married lady, who resided in the same neighbourhood. After dinner we amused ourselves by walking up and down the long grassy terrace that bordered the moat, and admiring the picturesque appearance of a remarkably tall Babylonian willow, that drooped over the moat, sweeping its graceful foliage into the water, as if to woo its tumbling shadow in the glassy mirror below. Our attention was soon attracted by the sight of a peacock of most splendid appearance, which, on the approach of his mistress, descended from one of the upper boughs of the willow, and advanced towards us with slow, majestic steps, erecting his crest and arching neck, as if to display his gorgeous colours to our view; like a court lady, he seemed somewhat to need the assistance of a train-bearer, as the longest and finest of his feathers were sadly injured from sweeping the dusty ground.

Though residing in the country all my life, I had seen but one of these rare birds before, and that chanced to be a white one. I remember being charmed with his beauty, though he certainly appeared to considerable disadvantage, as he lodged in a coal-house, or rather coal-hole; but in spite of the embellishment

of the coal dust, he was regarded by my sisters and myself as an object of great interest and admiration. The feathers of his crest, back, and train, were shaded with a beautiful pearly white, differing in texture from the rest of the plumage, and resembling the richest and finest silk damask in appearance. The owner of this rare bird had once been a farmer of some opulence, but owing to a variety of losses, he had been compelled to quit his farm, and retire to humble lodgings in a neighbouring village.

The peacock, which had been the delight of himself and his wife during their prosperity, now became the companion of their adversity, neither being disposed to part from him, though they had no convenience for his accommodation, not even so much as a court-yard for him to walk about in.

I fancy the poor white peacock, that had formerly enjoyed the unrestrained range of field and groves, did not much relish the change in his circumstances, which must have been most annoying to a bird so fond of liberty; besides the indignity and mortification of being forced to hide his beauty in so vile a prison as a dirty coal-hole, in which he had scarcely room sufficient to turn himself about without great inconvenience.

Our dairy-maid had formerly lived servant with the farmer and his wife, and she obtained mamma's permission to take her young ladies to see the white peacock. I was a very little girl at the time, but I well remember joining my voice to the general entreaty for the emancipation of the peacock from his odious place of confinement. The farmer regretted as he had no better lodgings for his favourite bird; and he was now too poor even to afford to buy dress-corn for its

consumption, he said if we would promise to be kind to him, and use him well, he would give us the peacock. This generous offer we heard with infinite satisfaction, but dared not accept it until we had consulted our parents. Many were the tears we shed when papa positively forbade us to receive the peacock, because he had been told these birds were exceedingly destructive to the fruit and vegetables in a garden. Now, papa's chief amusement and delight was superintending his flower and kitchen-gardens, and he suffered nothing to interfere with this favourite pursuit; so we were obliged to decline the farmer's offer of the white peacock. I heard afterwards he found a purchaser for his favourite in the person of a rich baronet's lady, who chanced to hear of his wish to dispose of the bird; and no doubt the poor captive was nothing loath to exchange his gloomy prison, among coal-dust, for the enjoyment of the extensive park and pleasure-grounds adjoining the hall.

Jupiter, for so the green peacock was called, was so gentle that he suffered us to approach him, and stroke his beautiful shining neck and back, and contemplate the exquisite shadings and variety of colours on his plumage, without appearing in the least displeased at our freedom; indeed he seemed, on the contrary, rather to court than shun our caresses, by following us up and down the green terrace, sweeping after us with the grandeur of a king adorned in his robes of state; though neither velvet nor pall could vie with the native lustre of our peacock's dress, which far outshone all silks, satins, or brocades, that ever came from the weaver's loom. No painter's skilful hand can blend the glorious hues, or give that brilliant tinting that we

observe in the plumage of this lively bird; so infinitely do the works of nature exceed those of art.

Seeing us so charmed with the peacock, our friend offered to present him to us, provided we could devise any plan for conveying him home; telling us at the same time she was apprehensive that he would be shot by the gamekeepers, as he had of late taken a great fancy for rambling in an adjacent wood. We could not find it in our hearts to refuse the gift so kindly offered, and agreed, that when mamma sent the servant and chaise to fetch us home, a distance of seventeen miles, we would, if possible carry home Jupiter.

This arrangement perfectly satisfied all parties that were admitted to the consultation; but whether it proved equally agreeable to Jupiter, I must leave undecided; certainly he conducted himself in a most accommodating manner during the journey, which must have been a very inconvenient one to him, as his legs were tied to prevent his escape, and a large portion of his long train hung drooping from beneath the apron, as he stood at the bottom of the chaise. He kept his head very meekly on my knee, and only trod on my foot once or twice during our ride. Few birds under his peculiar circumstances, I am convinced, would have behaved with so much moderation and good breeding. In short, Jupiter gave an additional proof of how greatly beauty of appearance may be heightened by good behaviour: a remark I would have my young readers particularly attend to. And let me assure them, the inward graces of the mind, with the adornments of a meek and quiet spirit, are prized by all persons, whose opinions are of any value, far beyond the mere outward show of dress or personal advantages.

A fit of illness or untoward accident may destroy the brilliancy of the finest complexion, or the graceful contour of the most perfect form; but gentleness, meekness, obedience, temperance, benevolence, and generosity, combined with true piety and humility of heart, are subject to no such casualties; but the more these virtues are exercised, the brighter they become; shining more and more unto perfect day. And without these graces, the most lovely face is neither valued or regarded; whilst the possession of them sheds a sweetness and serenity over the countenance, making the most homely features seem fair.

Having thus far moralized, let me now return to my narrative, and tell you what became of Jupiter.

As soon as we reached home, the servant released our patient prisoner from his bonds, and introduced him into the poultry-yard, throwing down some dress-corn for his supper; leaving him to improve his acquaintance with the hens, ducks, guinea-fowls, and pigs, that gathered about him with every symptom of astonishment and curiosity.

I fancied Jupiter looked something disconcerted at the unceremonious way in which the common fowl surveyed him, and the inhospitable and selfish manner with which they devoured the food that had been thrown down for his refreshment. However, he bore their ill-behaviour with much temperance, though evidently greatly disconcerted by their want of good breeding.

For some time he seemed undetermined where to pass the night; but being a bird of lofty notions, he chose the most exalted situation he could, which was no lower one than the topmost chimney of the old hall.

Now the highest station is not always the most agreeable, and Jupiter, I fancy, proved the truth of this remark, for the next night he descended a little lower—from the chimney of the house to the roof of the farm; and from thence still lower—to that of the cow-house. The fourth night he condescended to retire to a distant waggon-shed, where he finally fixed his roost on a long beam beneath the roof.

There were some peculiarities belonging to this bird that I cannot pass over unnoticed, and which, however singular, I can vouch for, as they fell under my own immediate observation, and are worthy of remark.

The day after their arrival, Jupiter took a regular survey of the premises; and as if he had been previously acquainted with the map of the estate, he visited every field and pasture-land, garden and plantation, without once trespassing on the adjoining land of our neighbours by any chance. He generally sought out the ploughman, Peter, and followed him while turning the furrows, keeping within a few yards of him and the horses. He was by nature a bird of solitary habits, living apart from the domestic fowls as much as possible. One white hen, however, attached herself peculiarly to him, and in spite of his evident disregard for her, persisted in forcing herself into his company, especially at his hours of feeding: like an evil genius she followed him everywhere. Some persons might have considered her affection purely disinterested: I gave her ladyship credit for no such motives, having narrowly watched her conduct, and observed that covetousness was the mainspring of all her pretended friendship for the peacock, to whose mess of corn or boiled potatoes she helped herself most plen-

tifully. This hen was the torment of Jupiter's life. The moment he received his supply of food, with the most audacious boldness she proceeded to devour the largest share: while the peacock, with great majesty and becoming dignity of deportment, was turning himself about, which he could not do very readily, on account of his long train, the white hen had darted her head under his wing, and nearly emptied his red earthen platter of its contents. Sometimes, when greatly outraged by her encroaching behaviour, he would give her a peck or two in the back, or a flap with his wing; but the rude creature never mended her manners, and would tread on his fine gay train with her dirty feet, if it incommoded her in any way. Her rudeness and presumption were quite disgusting.

Jupiter had been accustomed to come to the parlour windows to be fed and caressed, and the gentle creature would feed out of our hands; taking a morsel of bread or a few grains of corn from us, carefully avoiding hurting us with his sharp bill. He had grown so familiar that he always presented himself at meal-times to receive his share; his usual station being the lower shelf of an unoccupied flower-stand, where he patiently waited till his red platter was duly supplied with potatoes, or any other vegetable from the table. If the servant omitted to pay proper attention to the gentle notices he was wont to give of his presence, he would ascend the steps, and advertise him of his wants, by pecking at the glass, then descend to his former place; but if the summons was not obeyed after a second or third repetition, he would utter one or two loud, dis-

cordant notes of approbation, and walk away in evident displeasure.

Jupiter knew his station, and he knew the dinner-hour to a minute; one would almost have imagined he had had a watch, or could calculate the sun's advance on the dial-stone. Be it how it may, if the cook did not remember the dinner-hour, Jupiter did; for at two o'clock precisely he was sure to be at his post.

One week, owing to some unavoidable circumstances, we were less punctual than usual. Jupiter waited patiently for the cloth being laid, but growing tired, he went away. Next day the same accident occurred; Jupiter became indignant, and vented his reproaches in such squalls of disapprobation, that we were, in pity to our ears, obliged to have him huffed away. We began to wonder how he would proceed on the morrow. We imagined he would give up all hope, after his fruitless attempts, but we had not given this clever bird credit for his sagacity. Instead of wasting his precious time in watching the parlour windows, he placed himself in the court-yard, so as to command a view of what was going on in the kitchen; and as soon as the cook had taken up the dinner, away went the peacock to his stand, followed by his old attendant, the white hen. From that day Jupiter waited till the servant began to carry the dishes to the table before he went to his old post, and he never afterwards was disappointed of his dinner.

Jupiter's usual haunts were the fields, the plantation, the orchard, and the flower and kitchen garden, where I am obliged to confess with some reluctance, he made sad havoc among the fruit and tender vegetable crops,

paying particular attention to the young greens, carefully selecting, as dainties, the inner leaves and heart of the cabbage, brocoli, and cauliflower plants. The early-sown peas, both leaves and pods, he paid much respect to, besides having a delicate taste in lettuces, Brussel sprouts, savoys, and many other of the choicest vegetables. Nothing came amiss to him: he had an excellent appetite. He was extremely fond of blackberries; and I have often met him, when walking in the meadow, selecting the best and ripest for his desert that the hedges could afford.

Sad complaints were brought against our beautiful green bird for his misdoings in the gardens and fields, I must tell you; for he went out gleaning very regularly before the corn was cut. The gardener grumbled, mamma looked grave, and we were obliged to be very penitent for the depredations committed by our unlucky protége. In many instances, I am convinced, our poor pet was sadly traduced. If the garden-gate was carelessly left open, and a fat, overgrown hog, or a donkey got in and munched up a bed of nice vegetables, such as peas, beans, carrots, or cauliflowers, the mischief was all laid on Jupiter: it was that disagreeable, destructive bird that was in fault!

The following autumn, just about the latter part of November, Sarah and I received an invitation to spend a fortnight from home with a friend, but previous to our leaving home we gave strict injunctions to all the servants to pay due attention to the wants of Jupiter. A sudden and unexpected frost set in, accompanied by a heavy fall of snow, and Jupiter, who had been constant in his daily applications for food, was absent one morning at the usual time of being fed, at

noon-time he did not appear, and that afternoon he was discovered on his perch under the waggon-shed, frozen to death with the cold of the preceding night. This news greatly grieved us, for we loved the handsome green bird very much. We had not calculated on the chances of his sufferings from cold at this early period of the season, or we should have given orders to have him removed to a more sheltered roost of a night. Peacocks being originally natives of a very warm climate, are subject to die from exposure to an inclement atmosphere; therefore care should be taken to provide them with warm lodgings, and good food during sharp weather.

So lived and so died our peacock Jupiter! His plumage was carefully preserved, his body buried with all due decorum, under the great sycamore-tree in the garden, and his head sent as a present to an ingenious gentleman who lectures on skulls, whose mantelpiece it still graces, in company with that of a cuckoo, a hawk, an owl, and a sea gull.

A few remarks on the natural history of the peacock may not be wholly inapplicable.

Pavo, or the peacock, is a bird of eastern origin, being a native of India. They are found also in a wild state in the islands of Ceylon and Java. They abound in Persia, in Africa, and Asia, and in some of the West India islands; but near the river Ganges, in the East Indies, they are said to come to the greatest perfection, both for size and colour.

The Indians practice a curious method of capturing these birds in their native woods. They go out with torches to the trees where they roost, and climb-

ing the boughs, present a painted image of the peacock to their view. The peacock, who seems somewhat curious in his disposition, stretches forth his neck to examine the intruder, and is instantly captured by having a noose thrown over his head by the sportsman. The inhabitants of the river Ganges frequently take them by means of a strong birdlime, boiled from the milky juice of a tree called *ficus indicus*, and some other plant, with whose name I am unacquainted. In a sweet little poem, entitled "An Evening Walk in Bengal," in Bishop Heber's Journal, the peacock is thus mentioned:

> With pendant train and rushing wings,
> Aloft the gorgeous peacock springs;
> And he, the bird of hundred dyes,
> Whose plumes the dames of Ava prize.

In our climate the peacock does not come to perfection in size and colour under three years. The peahen lays five or six greyish eggs, but in hot countries twenty, about the size of those of a turkey. These she secretes in some private place, as the cock is apt to destroy them. The time of setting is from twenty-seven to thirty days. The little pea-fowl are not remarkable for their beauty. They may be fed with curd, chopped leeks or cabbage, boiled potatoes mixed with barley-meal, and moistened with water or milk. They eat worms and insects, especially grasshoppers.

These birds prefer the most elevated situations to roost in during the night—the branches of high trees, the tops of houses, sheds, and the like. They appear to have a great dislike to rain, uttering the most discordant cries during wet weather and previous to its commencement.

The life of this bird is reckoned by some naturalists to be twenty-five years, but others compute its extent to be not less than a hundred, in its wild, free state. Its flesh is still considered as a dainty, though rarely brought to table, excepting on grand occasions, at the houses of the great and rich.

The peacock must have been in some repute in Palestine; for we hear that Solomon caused his ships of Tarshish to bring, among other rare and precious merchandise, (as the gold of Ophir, ivory and spices,) apes and peacocks. When first introduced into Greece, they were sold into Athens for the sum of one thousand drachmæ, equal in value to thirty-two pounds five five shillings and ten pence. Alexander of Macedon was so struck with the beauty of this rare bird, when pursuing his conquests in India, that he made a law that no one, under payment of a severe penalty, should kill a peacock. It is supposed these birds were first introduced into Macedonia by this monarch.

At what time they first appeared in England is not precisely known. The feathers and crests it seems, from old chronicles, were worn as ornaments by our kings so early as the reign of John. In all probability they were brought from the East by the Crusaders, to whom we are indebted for many of our most useful arts, and luxuries of our gardens, both in fruits and flowers.