

EDGEWORTH RICHARD LOVELL,
EDGEWORTH MARIA

**PRACTICAL
EDUCATION,
VOLUME I**

Maria Edgeworth
Richard Edgeworth
Practical Education, Volume I

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Practical Education, Volume I:

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PREFACE

We shall not imitate the invidious example of some authors, who think it necessary to destroy the edifices of others, in order to clear the way for their own. We have no peculiar system to support, and, consequently, we have no temptation to attack the theories of others; and we have chosen the title of Practical Education, to point out that we rely entirely upon practice and experience.

To make any progress in the art of education, it must be patiently reduced to an experimental science: we are fully sensible of the extent and difficulty of this undertaking, and we have not the arrogance to imagine, that we have made any considerable progress in a work, which the labours of many generations may, perhaps, be insufficient to complete; but we lay before the publick the result of our experiments, and in many instances the experiments themselves. In pursuing this part of our plan, we have sometimes descended from that elevation of style, which the reader might expect in a quarto volume; we

have frequently been obliged to record facts concerning children which may seem trifling, and to enter into a minuteness of detail which may appear unnecessary. No anecdotes, however, have been admitted without due deliberation; nothing has been introduced to gratify the idle curiosity of others, or to indulge our own feelings of domestic partiality.

In what we have written upon the rudiments of science, we have pursued an opposite plan; so far from attempting to teach them in detail, we refer our readers to the excellent treatises on the different branches of science, and on the various faculties of the human mind, which are to be found in every language. The chapters that we have introduced upon these subjects, are intended merely as specimens of the manner in which we think young children should be taught. We have found from experience, that an early knowledge of the first principles of science may be given in conversation, and may be insensibly acquired from the usual incidents of life: if this knowledge be carefully associated with the technical terms which common use may preserve in the memory, much of the difficulty of subsequent instruction may be avoided.

The sketches we have hazarded upon these subjects, may to some appear too slight, and to others too abstruse and tedious. To those who have explored the vast mines of human knowledge, small specimens appear trifling and contemptible, whilst the less accustomed eye is somewhat dazzled and confused by the appearance even of a small collection: but to the most

enlightened minds, new combinations may be suggested by a new arrangement of materials, and the curiosity and enthusiasm of the inexperienced may be awakened, and excited to accurate and laborious researches.

With respect to what is commonly called the education of the heart, we have endeavoured to suggest the easiest means of inducing useful and agreeable habits, well regulated sympathy and benevolent affections. A witty writer says, "Il est permis d'ennuyer en moralites d'ici jusqu' a Constantinople." Unwilling to avail ourselves of this permission, we have sedulously avoided declamation, and, wherever we have been obliged to repeat ancient maxims, and common truths, we have at least thought it becoming to present them in a new dress.

On religion and politics we have been silent, because we have no ambition to gain partisans, or to make proselytes, and because we do not address ourselves exclusively to any sect or to any party. The scrutinizing eye of criticism, in looking over our table of contents, will also, probably, observe that there are no chapters on courage and chastity. To pretend to teach courage to Britons, would be as ridiculous as it is unnecessary; and, except amongst those who are exposed to the contagion of foreign manners, we may boast of the superior delicacy of our fair countrywomen; a delicacy acquired from domestic example, and confirmed by publick approbation. Our opinions concerning the female character and understanding, have been fully detailed

in a former publication;¹ and, unwilling to fatigue by repetition, we have touched but slightly upon these subjects in our chapters on Temper, Female Accomplishments, Prudence, and Economy.

We have warned our readers not to expect from us any new theory of education, but they need not apprehend that we have written without method, or that we have thrown before them a heap of desultory remarks and experiments, which lead to no general conclusions, and which tend to the establishment of no useful principles. We assure them that we have worked upon a regular plan, and where we have failed of executing our design, it has not been for want of labour or attention. Convinced that it is the duty and the interest of all who write, to inquire what others have said and thought upon the subject of which they treat, we have examined attentively the works of others, that we might collect whatever knowledge they contain, and that we might neither arrogate inventions which do not belong to us, nor weary the public by repetition. Some useful and ingenious essays may probably have escaped our notice; but we flatter ourselves, that our readers will not find reason to accuse us of negligence, as we have perused with diligent attention every work upon education, that has obtained the sanction of time or of public approbation, and, though we have never bound ourselves to the letter, we hope that we have been faithful to the spirit, of their authors. Without incumbering ourselves with any part of their systems which has not been authorized by experience, we have steadily attempted

¹ Letters for Literary Ladies.

immediately to apply to practice such of their ideas as we have thought useful; but whilst we have used the thoughts of others, we have been anxious to avoid mean plagiarism, and wherever we have borrowed, the debt has been carefully acknowledged.

The first hint of the chapter on Toys was received from Dr. Beddoes; the sketch of an introduction to chemistry for children was given to us by Mr. Lovell Edgeworth; and the rest of the work was resumed from a design formed and begun twenty years ago. When a book appears under the name of two authors, it is natural to inquire what share belongs to each of them. All that relates to the art of teaching to read in the chapter on Tasks, the chapters on Grammar and Classical Literature, Geography, Chronology, Arithmetic, Geometry, and Mechanics, were written by Mr. Edgeworth, and the rest of the book by Miss Edgeworth. She was encouraged and enabled to write upon this important subject, by having for many years before her eyes the conduct of a judicious mother in the education of a large family. The chapter on Obedience, was written from Mrs. Edgeworth's notes, and was exemplified by her successful practice in the management of her children; the whole manuscript was submitted to her judgment, and she revised parts of it in the last stage of a fatal disease.

CHAPTER I

TOYS

"Why don't you play with your playthings, my dear? I am sure that I have bought toys enough for you; why can't you divert yourself with them, instead of breaking them to pieces?" says a mother to her child, who stands idle and miserable, surrounded by disjointed dolls, maimed horses, coaches and one-horse chairs without wheels, and a nameless wreck of gilded lumber.

A child in this situation is surely more to be pitied than blamed; for is it not vain to repeat, "Why don't you play with your playthings," unless they be such as he can play with, which is very seldom the case; and is it not rather unjust to be angry with him for breaking them to pieces, when he can by no other device render them subservient to his amusement? He breaks them, not from the love of mischief, but from the hatred of idleness; either he wishes to see what his playthings are made of, and how they are made; or, whether he can put them together again, if the parts be once separated. All this is perfectly innocent; and it is a pity that his love of knowledge and his spirit of activity should be repressed by the undistinguishing correction of a nursery maid, or the unceasing reproof of a French governess.

The more natural vivacity and ingenuity young people possess, the less are they likely to be amused with the toys which are

usually put into their hands. They require to have things which exercise their senses or their imagination, their imitative, and inventive powers. The glaring colours, or the gilding of toys, may catch the eye, and please for a few minutes, but unless some use can be made of them, they will, and ought, to be soon discarded. A boy, who has the use of his limbs, and whose mind is untainted with prejudice, would, in all probability, prefer a substantial cart, in which he could carry weeds, earth and stones, up and down hill, to the finest frail coach and six that ever came out of a toy-shop: for what could he do with the coach after having admired, and sucked the paint, but drag it cautiously along the carpet of a drawing-room, watching the wheels, which will not turn, and seeming to sympathize with the just terrors of the lady and gentleman within, who are certain of being overturned every five minutes? When he is tired of this, perhaps, he may set about to unharness horses which were never meant to be unharnessed; or to currycomb their woollen manes and tails, which usually come off during the first attempt.

That such toys are frail and useless, may, however, be considered as evils comparatively small: as long as the child has sense and courage to destroy the toys, there is no great harm done; but, in general, he is taught to set a value upon them totally independent of all ideas of utility, or of any regard to his own real feelings. Either he is conjured to take particular care of them, because they cost a great deal of money; or else he is taught to admire them as miniatures of some of the fine things on which

fine people pride themselves: if no other bad consequence were to ensue, this single circumstance of his being guided in his choice by the opinion of others is dangerous. Instead of attending to his own sensations, and learning from his own experience, he acquires the habit of estimating his pleasures by the taste and judgment of those who happen to be near him.

"I liked the cart best," says the boy, "but mamma and every body said that the coach was the prettiest; so I chose the coach." – Shall we wonder if the same principle afterwards governs him in the choice of "the toys of age?"

A little girl, presiding at her baby tea-table, is pleased with the notion that she is like her mamma; and, before she can have any idea of the real pleasures of conversation and society, she is confirmed in the persuasion, that tattling and visiting are some of the most enviable privileges of grown people; a set of beings whom she believes to be in possession of all the sweets of happiness.

Dolls, beside the prescriptive right of ancient usage, can boast of such an able champion in Rousseau, that it requires no common share of temerity to attack them. As far as they are the means of inspiring girls with a taste for neatness in dress, and with a desire to make those things for themselves, for which women are usually dependent upon milliners, we must acknowledge their utility; but a watchful eye should be kept upon the child, to mark the first symptoms of a love of finery and fashion. It is a sensible remark of a late female writer, that whilst

young people work, the mind will follow the hands, the thoughts are occupied with trifles, and the industry is stimulated by vanity.

Our objections to dolls are offered with great submission and due hesitation. With more confidence we may venture to attack baby-houses; an unfurnished baby-house might be a good toy, as it would employ little carpenters and seamstresses to fit it up; but a completely furnished baby-house proves as tiresome to a child, as a finished seat is to a young nobleman. After peeping, for in general only a peep can be had into each apartment, after being thoroughly satisfied that nothing is wanting, and that consequently there is nothing to be done, the young lady lays her doll upon the state bed, if the doll be not twice as large as the bed, and falls fast asleep in the midst of her felicity.

Before dolls, baby-houses, coaches, and cups and saucers, there comes a set of toys, which are made to imitate the actions of men and women, and the notes or noises of birds and beasts. Many of these are ingenious in their construction, and happy in their effect, but that effect unfortunately is transitory. When the wooden woman has churned her hour in her empty churn; when the stiff backed man has hammered or sawed till his arms are broken, or till his employers are tired; when the gilt lamb has ba-ad, the obstinate pig squeaked, and the provoking cuckoo cried cuckoo, till no one in the house can endure the noise; what remains to be done? – Wo betide the unlucky little philosopher, who should think of inquiring why the woman churned, or how the bird cried cuckoo; for it is ten to one that in prosecuting such

an inquiry, just when he is upon the eve of discovery, he snaps the wire, or perforates the bellows, and there ensue "a death-like silence, and a dread repose."

The grief which is felt for spoiling a new plaything might be borne, if it were not increased, as it commonly is, by the reproaches of friends; much kind eloquence, upon these occasions, is frequently displayed, to bring the sufferer to a proper sense of his folly, till in due time the contrite corners of his mouth are drawn down, his wide eyes fill with tears, and, without knowing what he means, he promises never to be so silly any more. The future safety of his worthless playthings is thus purchased at the expense of his understanding, perhaps of his integrity: for children seldom scrupulously adhere to promises, which they have made to escape from impending punishment.

We have ventured to object to some fashionable toys; we are bound at least to propose others in their place; and we shall take the matter up soberly from the nursery.

The first toys for infants should be merely such things as may be grasped without danger, and which might, by the difference of their sizes, invite comparison: round ivory or wooden sticks should be put into their little hands; by degrees they will learn to lift them to their mouths, and they will distinguish their sizes: square and circular bits of wood, balls, cubes, and triangles, with holes of different sizes made in them, to admit the sticks, should be their playthings. No greater apparatus is necessary for the amusement of the first months of an infant's life. To ease the

pain which they feel from cutting teeth, infants generally carry to their mouths whatever they can lay their hands upon; but they soon learn to distinguish those bodies which relieve their pain, from those which gratify their palate; and, if they are left to themselves, they will always choose what is painted in preference to every thing else; nor must we attribute the look of delight with which they seize toys that are painted red, merely to the pleasure which their eye takes in the bright colour, but to the love of the sweet taste which they suck from the paint. What injury may be done to the health by the quantity of lead which is thus swallowed, we will not pretend to determine, but we refer to a medical name of high authority,² whose cautions probably will not be treated with neglect. To gratify the eye with glittering objects, if this be necessary, may be done with more safety by toys of tin and polished iron: a common steel button is a more desirable plaything to a young child than many expensive toys; a few such buttons tied together, so as to prevent any danger of their being swallowed, would continue for some time a source of amusement.

When a nurse wants to please or to pacify a child, she stuns its ear with a variety of noises, or dazzles its eye with glaring colours or stimulating light. The eye and the ear are thus fatigued without advantage, and the temper is hushed to a transient calm by expedients, which in time must lose their effect, and which can have no power over confirmed fretfulness. The pleasure of

² Dr. Fothergill.

exercising their senses, is in itself sufficient to children without any factitious stimulus, which only exhausts their excitability, and renders them incapable of being amused by a variety of common objects, which would naturally be their entertainment. We do not here speak of the attempts made to sooth a child who is ill; "to charm the sense of pain," so far as it can be done by diverting the child's attention from his own sufferings to outward objects, is humane and reasonable, provided our compassion does not induce in the child's mind the expectation of continual attendance, and that impatience of temper which increases bodily suffering. It would be in vain to read lectures on philosophy to a nurse, or to expect stoicism from an infant; but, perhaps, where mothers pay attention themselves to their children, they will be able to prevent many of the consequences of vulgar prejudice and folly. A nurse's wish is to have as little trouble as possible with the child committed to her charge, and at the same time to flatter the mother, from whom she expects her reward. The appearance of extravagant fondness for the child, of incessant attention to its humour, and absurd submission to its caprices, she imagines to be the surest method of recommending herself to favour. She is not to be imposed upon by the faint and affected rebukes of the fond mother, who exclaims, "Oh, nurse, indeed you *do* spoil that child sadly! – Oh, nurse, upon my word she governs you entirely! – Nurse, you must not let her have her own way always. – Never mind her crying, I beg, nurse." – Nurse smiles, sees that she has gained her point, and

promises what she knows it is not expected she should perform. Now if, on the contrary, she perceived that the mother was neither to be flattered nor pleased by these means, one motive for spoiling the child would immediately cease: another strong one would, it is true, still remain. A nurse wishes to save herself trouble, and she frequently consults her own convenience when she humours an infant. She hushes it to sleep, that she may leave it safely; she stops it from crying, that she may not hear an irritating noise, that she may relieve herself as soon as possible from the painful weakness of compassion, or that she may avoid the danger of being interrogated by the family as to the cause of the disturbance. It is less trouble to her to yield to caprice and ill-humour than to prevent or cure it, or at least she thinks it is so. In reality it is not; for an humoured child in time plagues its attendant infinitely more than it would have done with reasonable management. If it were possible to convince nurses of this, they would sacrifice perhaps the convenience of a moment to the peace of future hours, and they would not be eager to quell one storm, at the hazard of being obliged to endure twenty more boisterous; the candle would then no more be thrust almost into the infant's eyes to make it take notice of the light through the mist of tears, the eternal bunch of keys would not dance and jingle at every peevish summons, nor would the roarings of passion be overpowered by insulting songs, or soothed by artful caresses; the child would then be caressed and amused when he looks smiling and good-humoured, and all parties would be much

happier.

Practical education begins very early, even in the nursery. Without the mountebank pretence, that miracles can be performed by the turning of a straw, or the dictatorial anathematizing tone, which calls down vengeance upon those who do not follow to an iota the injunctions of a theorist, we may simply observe, that parents would save themselves a great deal of trouble, and their children some pain, if they would pay some attention to their early education. The temper acquires habits much earlier than is usually apprehended; the first impressions which infants receive, and the first habits which they learn from their nurses, influence the temper and disposition long after the slight causes which produced them are forgotten. More care and judgment than usually fall to the share of a nurse are necessary, to cultivate the disposition which infants show, to exercise their senses, so as neither to suffer them to become indolent and torpid from want of proper objects to occupy their attention, nor yet to exhaust their senses by continual excitation. By ill-timed restraints or injudicious incitements, the nurse frequently renders the child obstinate or passionate. An infant should never be interrupted in its operations; whilst it wishes to use its hands, we should not be impatient to make it walk; or when it is pacing, with all the attention to its centre of gravity that is exerted by a rope-dancer, suddenly arrest its progress, and insist upon its pronouncing the scanty vocabulary which we have compelled it to learn. When children are busily trying experiments upon

objects within their reach, we should not, by way of saving them trouble, break the course of their ideas, and totally prevent them from acquiring knowledge by their own experience. When a foolish nurse sees a child attempting to reach or lift any thing, she runs immediately, "Oh, dear love, it can't do it, it can't! – I'll do it for it, so I will!" – If the child be trying the difference between pushing and pulling, rolling or sliding, the powers of the wedge or the lever, the officious nurse hastens instantly to display her own knowledge of the mechanic powers: "Stay, love, stay; that is not the way to do it – I'll show it the right way – see here – look at me love." – Without interrupting a child in the moment of action, proper care might previously be taken to remove out of its way those things which can really hurt it, and a just degree of attention must be paid to its first experiments upon hard and heavy, and more especially upon sharp, brittle, and burning bodies; but this degree of care should not degenerate into cowardice; it is better that a child should tumble down or burn its fingers, than that it should not learn the use of its limbs and its senses. We should for another reason take care to put all dangerous things effectually out of the child's reach, instead of saying perpetually, "Take care, don't touch that! – don't do that! – let that alone!" The child, who scarcely understands the words, and not at all the reason of these prohibitions, is frightened by the tone and countenance with which they are uttered and accompanied; and he either becomes indolent or cunning; either he desists from exertion, or seizes the moment to divert himself with forbidden objects,

when the watchful eye that guards them is withdrawn. It is in vain to encompass the restless prisoner with a fortification of chairs, and to throw him an old almanack to tear to pieces, or an old pincushion to explore; the enterprising adventurer soon makes his escape from this barricado, leaves his goods behind him, and presently is again in what the nurse calls mischief.

Mischief is with nurses frequently only another name for any species of activity which they find troublesome; the love which children are supposed to have for pulling things out of their places, is in reality the desire of seeing things in motion, or of putting things into different situations. They will like to put the furniture in a room in its proper place, and to arrange every thing in what we call order, if we can make these equally permanent sources of active amusement; but when things are once in their places, the child has nothing more to do, and the more quickly each chair arrives at its destined situation, the sooner comes the dreaded state of idleness and quiet.

A nursery, or a room in which young children are to live, should never have any furniture in it which they can spoil; as few things as possible should be left within their reach which they are not to touch, and at the same time they should be provided with the means of amusing themselves, not with painted or gilt toys, but with pieces of wood of various shapes and sizes, which they may build up and pull down, and put in a variety of different forms and positions; balls, pulleys, wheels, strings, and strong little carts, proportioned to their age, and to the things which they

want to carry in them, should be their playthings.

Prints will be entertaining to children at a very early age; it would be endless to enumerate the uses that may be made of them; they teach accuracy of sight, they engage the attention, and employ the imagination. In 1777 we saw L – , a child of two years old, point out every piece of furniture in the French prints of Gil Blas; in the print of the Canon at Dinner, he distinguished the knives, forks, spoons, bottles, and every thing upon the table: the dog lying upon the mat, and the bunch of keys hanging at Jacintha's girdle; he told, with much readiness, the occupation of every figure in the print, and could supply, from his imagination, what is supposed to be hidden by the foremost parts of all the objects. A child of four years old was asked, what was meant by something that was very indistinctly represented as hanging round the arm of a figure in one of the prints of the London Cries. He said it was a glove; though it had as little resemblance to a glove, as to a ribbon or a purse. When he was asked how he knew that it was a glove, he answered, "that it ought to be a glove, because the woman had one upon her other arm, and none upon that where the thing was hanging." Having seen the gown of a female figure in a print hanging obliquely, the same child said, "The wind blows that woman's gown back." We mention these little circumstances from real life, to show how early prints may be an amusement to children, and how quickly things unknown, are learnt by the relations which they bear to what was known before. We should at the same time observe, that children are

very apt to make strange mistakes, and hasty conclusions, when they begin to reason from analogy. A child having asked what was meant by some marks in the forehead of an old man in a print; and having been told, upon some occasion, that old people were wiser than young ones, brought a print containing several figures to his mother, and told her that *one*, which he pointed to, was wiser than all the rest; upon inquiry, it was found that he had formed this notion from seeing that one figure was wrinkled, and that the others were not.

Prints for children should be chosen with great care; they should represent objects which are familiar; the resemblances should be accurate, and the manners should be attended to, or at least, the general moral that is to be drawn from them. The attitude of Sephora, the boxing lady in *Gil Blas*, must appear unnatural to children who have not lived with termagant heroines. Perhaps, the first ideas of grace, beauty, and propriety, are considerably influenced by the first pictures and prints which please children. Sir Joshua Reynolds tells us, that he took a child with him through a room full of pictures, and that the child stopped, with signs of aversion, whenever it came to any picture of a figure in a constrained attitude.

Children soon judge tolerably well of proportion in drawing, where they have been used to see the objects which are represented: but we often give them prints of objects, and of animals especially, which they have never seen, and in which no sort of proportion is observed. The common prints of animals

must give children false ideas. The mouse and the elephant are nearly of the same size, and the crocodile and whale fill the same space in the page. Painters, who put figures of men amongst their buildings, give the idea of the proportionate height immediately to the eye: this is, perhaps, the best scale we can adopt; in every print for children this should be attended to. Some idea of the relative sizes of the animals they see represented would then be given, and the imagination would not be filled with chimeras.

After having been accustomed to examine prints, and to trace their resemblance to real objects, children will probably wish to try their own powers of imitation. At this moment no toy, which we could invent for them, would give them half so much pleasure as a pencil. If we put a pencil into their hands even before they are able to do any thing with it but make random marks all over a sheet of paper, it will long continue a real amusement and occupation. No matter how rude their first attempts at imitation may be; if the attention of children be occupied, our point is gained. Girls have generally one advantage at this age over boys, in the exclusive possession of the scissors: how many camels, and elephants with amazing trunks, are cut out by the industrious scissors of a busy, and therefore happy little girl, during a winter evening, which passes so heavily, and appears so immeasurably long, to the idle.

Modelling in clay or wax might probably be a useful amusement about this age, if the materials were so prepared, that the children could avoid being every moment troublesome

to others whilst they are at work. The making of baskets, and the weaving of sash-line, might perhaps be employment for children; with proper preparations, they might at least be occupied with these things; much, perhaps, might not be produced by their labours, but it is a great deal to give early habits of industry. Let us do what we will, every person who has ever had any experience upon the subject, must know that it is scarcely possible to provide sufficient and suitable occupations for young children: this is one of the first difficulties in education. Those who have never tried the experiment, are astonished to find it such a difficult and laborious business as it really is, to find employments for children from three to six years old. It is perhaps better, that our pupils should be entirely idle, than that they should be half employed. "My dear, have you nothing to do?" should be spoken in sorrow rather than in anger. When they see other people employed and happy, children feel mortified and miserable to have nothing to do. Count Rumford's was an excellent scheme for exciting sympathetic industry amongst the children of the poor at Munich; in the large hall, where the elder children were busy in spinning, there was a range of seats for the younger children, who were not yet permitted to work; these being compelled to sit idle, and to see the busy multitude, grew extremely uneasy in their own situation, and became very anxious to be employed. We need not use any compulsion or any artifice; parents in every family, we suppose, who think of educating their own children, are employed some hours in the day in reading, writing, business,

or conversation; during these hours, children will naturally feel the want of occupation, and will, from sympathy, from ambition and from impatience of insupportable ennui, desire with anxious faces, "to have something to do." Instead of loading them with playthings, by way of relieving their misery, we should honestly tell them, if that be the truth, "I am sorry I cannot find any thing for you to do at present. I hope you will soon be able to employ yourself. What a happy thing it will be for you to be able, by and by, to read, and write and draw; then you will never be forced to sit idle."

The pains of idleness stimulate children to industry, if they are from time to time properly contrasted with the pleasures of occupation. We should associate cheerfulness, and praise, and looks of approbation, with industry; and, whenever young people invent employments for themselves, they should be assisted as much as possible, and encouraged. At that age when they are apt to grow tired in half an hour of their playthings, we had better give them playthings only for a very short time, at intervals in the day; and, instead of waiting till they are tired, we should take the things away before they are weary of them. Nor should we discourage the inquisitive genius from examining into the structure of their toys, whatever they may be. The same ingenious and active dispositions, which prompt these inquiries, will secure children from all those numerous temptations to do mischief, to which the idle are exposed. Ingenious children are pleased with contrivances which answer the purposes for which they are

intended: and they feel sincere regret whenever these are injured or destroyed: this we mention as a further comfort and security for parents, who, in the company of young mechanics, are apt to tremble for their furniture. Children who observe, and who begin to amuse themselves with *thought*, are not so actively hostile in their attacks upon inanimate objects. We were once present at the dissection of a wooden cuckoo, which was attended with extreme pleasure by a large family of children; and it was not one of the children who broke the precious toy, but it was the father who took it to pieces. Nor was it the destruction of the plaything which entertained the company, but the sight of the manner in which it was constructed. Many guesses were made by all the spectators about the internal structure of the cuckoo, and the astonishment of the company was universal, when the bellows were cut open, and the simple contrivance was revealed to view; probably, more was learnt from this cuckoo, than was ever learnt from any cuckoo before. So far from being indifferent to the destruction of this plaything, H – the little girl of four years old, to whom it belonged, remembered, several months afterwards, to remind her father of his promise to repair the mischief he had done.

"Several toys, which are made at present, are calculated to give pleasure merely by exciting surprise, and of course give children's minds such a tone, that they are afterwards too fond of *similar useless baubles*."³ This species of delight is soon over,

³ Dr. Beddoes.

and is succeeded by a desire to triumph in the ignorance, the credulity, or the cowardice, of their companions. Hence that propensity to play tricks, which is often injudiciously encouraged by the smiles of parents, who are apt to mistake it for a proof of wit and vivacity. They forget, that "gentle dulness ever loved a joke;" and that even wit and vivacity, if they become troublesome and mischievous, will be feared, and shunned. Many juggling tricks and puzzles are highly ingenious; and, as far as they can exercise the invention or the patience of young people, they are useful. Care, however, should be taken, to separate the ideas of deceit and of ingenuity, and to prevent children from glorying in the mere possession of a secret.

Toys which afford trials of dexterity and activity, such as tops, kites, hoops, balls, battledores and shuttlecocks, ninepins, and cup-and-ball, are excellent; and we see that they are consequently great and lasting favourites with children; their senses, their understanding, and their passions, are all agreeably interested and exercised by these amusements. They emulate each other; but, as some will probably excel at one game, and some at another, this emulation will not degenerate into envy. There is more danger that this hateful passion should be created in the minds of young competitors at those games, where it is supposed that some *knack* or *mystery* is to be learned before they can be played with success. Whenever children play at such games, we should point out to them how and why it is that they succeed or fail: we may show them, that, in reality, there is no *knack* or *mystery* in any thing,

but that from certain causes certain effects will follow; that, after trying a number of experiments, the circumstances essential to success may be discovered; and that all the ease and dexterity, which we often attribute to the power of natural genius, is simply the consequence of practice and industry. This sober lesson may be taught to children without putting it into grave words or formal precepts. A gentleman once astonished a family of children by his dexterity in playing at bilboquet: he caught the ball nine or ten times successively with great rapidity upon the spike: this success appeared miraculous; and the father, who observed that it had made a great impression upon the little spectators, took that opportunity to show the use of spinning the ball, to make the hole at the bottom ascend in a proper direction. The nature of centrifugal motion, and its effect, in preserving the *parallelism of motion*, if we may be allowed the expression, was explained, not at once, but at different intervals, to the young audience. Only as much was explained at a time as the children could understand, without fatiguing their attention, and the abstruse subject was made familiar by the mode of illustration that was adopted.

It is surprising how much children may learn from their playthings, when they are judiciously chosen, and when the habit of reflection and observation is associated with the ideas of amusement and happiness. A little boy of nine years old, who had had a hoop to play with, asked "why a hoop, or a plate, if rolled upon its edge, keeps up as long as it rolls, but falls as soon as it stops, and will not stand if you try to make it stand still upon its

edge?" Was not the boy's understanding as well employed whilst he was thinking of this phenomenon, which he observed whilst he was beating his hoop, as it could possibly have been by the most learned preceptor?

When a pedantic schoolmaster sees a boy eagerly watching a paper kite, he observes, "What a pity it is that children cannot be made to mind their grammar as well as their kites!" And he adds, perhaps, some peevish ejaculation on the natural idleness of boys, and that pernicious love of play against which he is doomed to wage perpetual war. A man of sense will see the same thing with a different eye; in this pernicious love of play he will discern the symptoms of a love of science, and, instead of deploring the natural idleness of children, he will admire the activity which they display in the pursuit of knowledge. He will feel that it is his business to direct this activity, to furnish his pupil with materials for fresh combinations, to put him or to let him put himself, in situations where he can make useful observations, and acquire that experience which cannot be bought, and which no masters can communicate.

It will not be beneath the dignity of a philosophic tutor to consider the different effects, which the most common plays of children have upon the habits of the understanding and temper. Whoever has watched children putting together a dissected map, must have been amused with the trial between Wit and Judgment. The child, who quickly perceives resemblances, catches instantly at the first bit of the wooden map, that has a

single hook or hollow that seems likely to answer his purpose; he makes, perhaps, twenty different trials before he hits upon the right; whilst the wary youth, who has been accustomed to observe differences, cautiously examines with his eye the whole outline before his hand begins to move; and, having exactly compared the two indentures, he joins them with sober confidence, more proud of never disgracing his judgment by a fruitless attempt, than ambitious of rapid success. He is slow, but sure, and wins the day.

There are some plays which require presence of mind, and which demand immediate attention to what is actually going forward, in which children, capable of the greatest degree of abstract attention, are most apt to be defective. They have many ideas, but none of them ready, and their knowledge is useless, because it is recollected a moment too late. Could we, in suitably dignified language, describe the game of "birds, beasts, and fishes," we should venture to prescribe it as no very painful remedy for these absent and abstracted personages. When the handkerchief or the ball is thrown, and when his bird's name is called for, the absent little philosopher is obliged to collect his scattered thoughts instantaneously, or else he exposes himself to the ridicule of naming, perhaps, a fish or a beast, or any bird but the right. To those children, who, on the contrary, are not sufficiently apt to abstract their attention, and who are what Bacon calls "birdwitted," we should recommend a solitary-board. At the solitary-board they must withdraw their thoughts from all

external objects, hear nothing that is said, and fix their attention solely upon the figure and the pegs before them, else they will never succeed; and, if they make one error in their calculations, they lose all their labour. Those who are precipitate, and not sufficiently attentive to the consequences of their own actions, may receive many salutary lessons at the draught or chess-board – happy, if they can learn prudence and foresight, by frequently losing the battle.

We are not quite so absurd as to imagine, that any great or permanent effects can be produced by such slight causes as a game at draughts, or at a solitary-board, but the combination of a number of apparent trifles, is not to be neglected in education.

We have never yet mentioned what will probably first occur to those who would invent employments for children. We have never yet mentioned a garden; we have never mentioned those great delights to children, a spade, a hoe, a rake, and a wheelbarrow. We hold all these in proper respect; but we did not sooner mention them, because, if introduced too early, they are useless. We must not expect, that a boy six or seven years old, can find, for any length of time, sufficient daily occupation in a garden: he has not strength for hard labour; he can dig soft earth; he can weed groundsel, and other weeds, which take no deep root in the earth; but after he has weeded his little garden, and sowed his seeds, there must be a suspension of his labours. Frequently children, for want of something to do, when they have sowed flower-seeds in their crooked beds, dig up the hopes of

the year to make a new walk, or to sink a well in their garden. We mention these things, that parents may not be disappointed, or expect more from the occupation of a garden, than it can, at a very early age, afford. A garden is an excellent resource for children, but they should have a variety of other occupations: rainy days will come, and frost and snow, and then children must be occupied within doors. We immediately think of a little set of carpenter's tools, to supply them with active amusement. Boys will probably be more inclined to attempt making models, than drawings of the furniture which appears to be the most easy to imitate; they will imagine that, if they had but tools, they could make boxes, and desks, and beds, and chests of drawers, and tables and chairs innumerable. But, alas! these fond imaginations are too soon dissipated. Suppose a boy of seven years old to be provided with a small set of carpenter's tools, his father thinks perhaps that he has made him completely happy; but a week afterwards the father finds dreadful marks of the file and saw upon his mahogany tables; the use of these tools is immediately interdicted until a bench shall be procured. Week after week passes away, till at length the frequently reiterated speech of "Papa, you bid me put you in mind about my bench." "Papa" has its effect, and the bench appears. Now the young carpenter thinks he is quite set up in the world, and projects carts and boxes, and reading-desks and writing-desks for himself and for his sisters, if he have any; but when he comes to the execution of his plans, what new difficulties, what new wants arise! the

wood is too thick or too thin; it splits, or it cannot be cut with a knife; wire, nails, glue, and above all, the means of heating the glue, are wanting. At last some frail machine, stuck together with pegs or pins, is produced, and the workman is usually either too much ridiculed, or too much admired. The step from pegging to mortising is a very difficult step, and the want of a mortising-chisel is insuperable: one tool is called upon to do the duty of another, and the pricker comes to an untimely end in doing the hard duty of the punch; the saw wants setting; the plane will plane no longer; and the mallet must be used instead of the hammer, because the hammer makes so much noise, that the ladies of the family have voted for its being locked up. To all these various evils the child submits in despair; and finding, after many fruitless exertions, that he cannot make any of the fine things he had projected, he throws aside his tools, and is deterred by these disappointments from future industry and ingenuity. Such are the consequences of putting excellent tools into the hands of children before they can possibly use them: but the tools which are useless at seven years old, will be a most valuable present at eleven or twelve, and for this age it will be prudent to reserve them. A rational toy-shop should be provided with all manner of carpenter's tools, with wood properly prepared for the young workman, and with screws, nails, glue, emery-paper, and a variety of articles which it would be tedious to enumerate; but which, if parents could readily meet within a convenient assemblage, they would willingly purchase for their children. The

trouble of hunting through a number of different shops, prevents them at present from purchasing such things; besides, they may not perhaps be sufficiently good carpenters to know distinctly every thing that is necessary for a young workman.

Card, pasteboard, substantial but not sharp-pointed scissors, wire, gum and wax, may, in some degree, supply the want of carpenter's tools at that early age when we have observed that the saw and plane are useless. Models of common furniture should be made as toys, which should take to pieces, so that all their parts, and the manner in which they are put together, might be seen distinctly; the names of the different parts should be written⁴ or stamped upon them: by these means the names will be associated with realities; children will retain them in their memory, and they will neither learn by rote technical terms, nor will they be retarded in their progress in mechanical invention by the want of language. Before young people can use tools, these models will amuse and exercise their attention. From models of furniture we may go on to models of architecture; pillars of different orders, the roofs of houses, the manner of slating and tiling, &c. Then we may proceed to models of simple machines, choosing at first such as can be immediately useful to children in their own amusements, such as wheelbarrows, carts, cranes, scales, steelyards, jacks, and pumps, which children ever view with eager eyes.

From simple, it will be easy to proceed gradually to models of

⁴ We are indebted to Dr. Beddoes for this idea.

more complicated, machinery: it would be tiresome to give a list of these; models of instruments used by manufacturers and artists should be seen; many of these are extremely ingenious; spinning-wheels, looms, paper-mills, wind-mills, water-mills, might with great advantage be shown in miniature to children.

The distracting noise and bustle, the multitude of objects which all claim the attention at once, prevent young people from understanding much of what they see, when they are first taken to look at large manufactories. If they had previously acquired some general idea of the whole, and some particular knowledge of the different parts, they would not stare when they get into these places; they would not "stare round, see nothing, and come home content," bewildered by the sight of cogs and wheels; and the explanations of the workmen would not be all jargon to them; they would understand some of the technical terms, which so much alarm the intellects of those who hear them for the first time.

We may exercise the ingenuity and judgment of children by these models of machines, by showing them first the thing to be done, and exciting them to invent the best means of doing it; afterwards give the models as the reward for their ingenuity, and let them compare their own inventions with the contrivances actually in use amongst artificers; by these means, young people may be led to compare a variety of different contrivances; they will discern what parts of a machine are superfluous, and what inadequate, and they will class particular observations gradually

under general principles. It may be thought, that this will tend to give children only mechanical invention, or we should call it, perhaps, the invention of machines; and those who do not require this particular talent, will despise it as unnecessary in what are called the liberal professions. Without attempting to compare the value of different intellectual talents, we may observe, that they are all in some measure dependent upon each other. Upon this subject we shall enlarge more fully when we come to consider the method of cultivating the memory and invention.

Chemical toys will be more difficult to manage than mechanical, because the materials, requisite to try many chemical experiments, are such as cannot safely be put into the hands of children. But a list of experiments, and of the things necessary to try them, might easily be drawn out by a chemist who would condescend to such a task; and if these materials, with proper directions, were to be found at a rational toy-shop, parents would not be afraid of burning or poisoning their children in the first chemical lessons. In some families, girls are taught the confectionary art; might not this be advantageously connected with some knowledge of chemistry, and might not they be better taught than by Mrs. Raffeld or Mrs. Glass?⁵ Every culinary operation may be performed as an art, probably, as well by a cook as by a chemist; but, if the chemist did not assist the cook now and then with a little science, epicures would have great reason for lamentation. We do not, by any means, advise that girls

⁵ We do not mean to do injustice to Mrs. Raffeld's professional skill.

should be instructed in confectionary arts, at the hazard of their keeping company with servants. If they learn any thing of this sort, there will be many precautions necessary to separate them from servants: we do not advise that these hazards should be run; but if girls learn confectionary, let them learn the principles of chemistry, which may assist in this art.⁶

Children are very fond of attempting experiments in dyeing, and are very curious about vegetable dyes; but they can seldom proceed for want of the means of boiling, evaporating, distilling, and subliming. Small stills, and small tea-kettles and lamps, would be extremely useful to them: these might be used in the room with the children's parents, which would prevent all danger: they should continue to be the property of the parents, and should be produced only when they are wanted. No great apparatus is necessary for showing children the first simple operations in chemistry: such as evaporation, crystalization, calcination, detonation, effervescence, and saturation. Water and fire, salt and sugar, lime and vinegar, are not very difficult to be procured; and a wine-glass is to be found in every house. The difference between an acid and alkali should be early taught to children; many grown people begin to learn chemistry, without distinctly knowing what is meant by those terms.

In the selection of chemical experiments for young people, it will be best to avoid such as have the appearance of jugglers tricks, as it is not our purpose to excite the amazement of

⁶ V. Diderot's ingenious preface to "Chymie de gout et de l'odorat."

children for the moment, but to give them a permanent taste for science. In a well known book, called "Hooper's *Rational Recreations*," there are many ingenious experiments; but through the whole work there is such a want of an enlarged mind, and such a love of magic and deception appears, as must render it not only useless, but unsafe, for young people, in its present state. Perhaps a selection might be made from it in which these defects might be avoided: such titles as "*The real apparition: the confederate counters: the five beatitudes: and the book of fate*," may be changed for others more *rational*. Receipts for "*Changing winter into spring*," for making "*Self-raising pyramids, enchanted mirrors, and intelligent flies*," might be omitted, or explained to advantage. Recreation the 5th, "To tell by the dial of a watch at what hour any person intends to rise;" Recreation the 12th, "To produce the appearance of a phantom on a pedestal placed on the middle of a table;" and Recreation the 30th, "To write several letters which contain no meaning, upon cards; to make them, after they have been twice shuffled, give an answer to a question that shall be proposed;" as for example, "What is love?" scarcely come under the denomination of Rational Recreations, nor will they much conduce to the end proposed in the introduction to Hooper's work; that is to say, in his own words, "To enlarge and fortify the mind of man, that he may advance with tranquil steps through the flowery paths of investigation, till arriving at some noble eminence, he beholds, with awful astonishment, the boundless regions of science, and becomes animated to attain a

still more lofty station, whilst his heart is incessantly rapt with joys of which the groveling herd have no conception."

Even in those chemical experiments in this book, which are really ingenious and entertaining, we should avoid giving the old absurd titles, which can only confuse the understanding, and spoil the taste of children. The tree of Diana, and "Philosophic wool," are of this species. It is not necessary to make every thing marvellous and magical, to fix the attention of young people; if they are properly educated, they will find more amusement in discovering, or in searching for the cause of the effects which they see, than in a blind admiration of the juggler's tricks.

In the papers of the Manchester Society, in Franklin's letters, in Priestley's and Percival's works, there may be found a variety of simple experiments which require no great apparatus, and which will at once amuse and instruct. All the papers of the Manchester Society, upon the repulsion and attraction of oil and water, are particularly suited to children, because they state a variety of simple facts; the mind is led to reason upon them, and induced to judge of the different conclusions which are drawn from them by different people. The names of Dr. Percival, or Dr. Wall, will have no weight with children; they will compare only the reasons and experiments. Oil and water, a cork, a needle, a plate, and a glass tumbler, are all the things necessary for these experiments. Mr. Henry's experiments upon the influence that fixed air has on vegetation, and several of Reaumur's experiments, mentioned in the memoirs of the French Academy

of Sciences, are calculated to please young people much, and can be repeated without expense or difficulty.

To those who acquire habits of observation, every thing that is to be seen or heard, becomes a source of amusement. Natural history interests children at an early age; but their curiosity and activity is often repressed and restrained by the ignorance or indolence of their tutors. The most inquisitive genius grows tired of repeating, "Pray look at this – What is it? What can the use of this be?" when the constant answer is, "Oh! it's nothing worth looking at, throw it away, it will dirty the house." Those who have attended to the ways of children and parents, well know that there are many little inconveniences attending their amusements, which the sublime eye of the theorist in education overlooks, which, nevertheless, are essential to practical success. "It will dirty the house," puts a stop to many of the operations of the young philosopher; nor is it reasonable that his experiments should interfere with the necessary regularity of a well ordered family. But most well ordered families allow their horses and their dogs to have houses to themselves; cannot one room be allotted to the children of the family? If they are to learn chemistry, mineralogy, botany, or mechanics; if they are to take sufficient bodily exercise without tormenting the whole family with noise, a room should be provided for them. We mention exercise and noise in particular, because we think they will, to many, appear of the most importance.

To direct children in their choice of fossils, and to give them

some idea of the general arrangements of mineralogy, toy-shops should be provided with specimens of ores, &c. properly labelled and arranged, in drawers, so that they may be kept in order. Children should have empty shelves in their cabinets, to be filled with their own collections; they will then know how to direct their researches, and how to dispose of their treasures. If they have proper places to keep things in, they will acquire a taste for order by the best means, by feeling the use of it: to either sex, this taste will be highly advantageous. Children who are active and industrious, and who have a taste for natural history, often collect, with much enthusiasm, a variety of pebbles and common stones, which they value as great curiosities, till some surly mineralogist happens to see them, and condemns them all with one supercilious "pshaw!" or else a journey is to be taken, and there is no way in making up the heterogeneous, cumbersome collection, which must, of course, be abandoned. Nay, if no journey is to be taken, a visitor, perhaps, comes unexpectedly; the little naturalist's apartment must be vacated on a few minutes notice, and the labour of years falls a sacrifice, in an instant, to the housemaid's undistinguishing broom.

It may seem trifling to insist so much upon such slight things, but, in fact, nothing can be done in education without attention to minute circumstances. Many who have genius to sketch large plans, have seldom patience to attend to the detail which is necessary for their accomplishment. This is a useful, and therefore, no humiliating drudgery.

With the little cabinets, which we have mentioned, should be sold cheap microscopes, which will unfold a world of new delights to children; and it is very probable that children will not only be entertained with looking at objects through a microscope, but they will consider the nature of the magnifying glass. They should not be rebuffed with the answer, "Oh, it's only a common magnifying glass," but they should be encouraged in their laudable curiosity; they may easily be led to try slight experiments in optics, which will, at least, give the habits of observation and attention. In Dr. Priestley's History of Vision, many experiments may be found, which are not above the comprehension of children of ten or eleven years old; we do not imagine that any science can be taught by desultory experiments, but we think that a taste for science may early be given by making it entertaining, and by exciting young people to exercise their reasoning and inventive faculties upon every object which surrounds them. We may point out that great discoveries have often been made by attention to slight circumstances. The blowing of soap bubbles, as it was first performed as a scientific experiment by the celebrated Dr. Hook, before the Royal Society, makes a conspicuous figure in Dr. Priestley's chapter on the reflection of light; this may be read to children, and they will be pleased when they observe that what at first appeared only a trifling amusement, has occupied the understanding, and excited the admiration, of some great philosophers.

Every child observes the colours which are to be seen in panes of glass windows: in Priestley's History of Vision, there are some experiments of Hook's and Lord Brereton's upon these colours, which may be selected. Buffon's observations upon blue and green shadows, are to be found in the same work, and they are very entertaining. In Dr. Franklin's letters, there are numerous experiments, which are particularly suited to young people; especially, as in every instance he speaks with that candour and openness to conviction, and with that patient desire to discover truth, which we should wish our pupils to admire and imitate.

The history of the experiments which have been tried in the progress of any science, and of the manner in which observations of minute facts have led to great discoveries, will be useful to the understanding, and will gradually make the mind expert in that mental algebra, on which both reasoning and invention (which is, perhaps, only a more rapid species of reasoning) depend. In drawing out a list of experiments for children, it will, therefore, be advantageous to place them in that order which will best exhibit their relative connection; and, instead of showing young people the steps of a discovery, we should frequently pause to try if they can invent. In this, our pupils will succeed often beyond our expectations; and, whether it be in mechanics, chemistry, geometry, or in the arts, the same course of education will be found to have the same advantages. When the powers of reason have been cultivated, and the inventive faculty exercised; when general habits of voluntary exertion and patient perseverance,

have been acquired, it will be easy, either for the pupil himself, or for his friends, to direct his abilities to whatever is necessary for his happiness. We do not use the phrase, *success in the world*, because, if it conveys any distinct ideas, it implies some which are, perhaps, inconsistent with real happiness.

Whilst our pupils occupy and amuse themselves with observation, experiment, and invention, we must take care that they have a sufficient variety of manual and bodily exercises. A turning-lathe, and a work-bench, will afford them constant active employment; and when young people can invent, they feel great pleasure in the execution of their own plans. We do not speak from vague theory; we have seen the daily pleasures of the work-bench, and the persevering eagerness with which young people work in wood, and brass, and iron, when tools are put into their hands at a proper age, and when their understanding has been previously taught the simple principles of mechanics. It is not to be expected that any exhortations we could use, could prevail upon a father, who happens to have no taste for mechanics, or for chemistry, to spend any of his time in his children's laboratory, or at their work-bench; but in his choice of a tutor, he may perhaps supply his own defects; and he will consider, that even by interesting himself in the daily occupations of his children, he will do more in the advancement of their education, than can be done by paying money to a hundred masters.

We do not mean to confine young people to the laboratory or the work-bench, for exercise; the more varied exercises, the

better. Upon this subject we shall speak more fully hereafter: we have in general recommended all trials of address and dexterity, except games of chance, which we think should be avoided, as they tend to give a taste for gambling; a passion, which has been the ruin of so many young men of promising talents, of so many once happy families, that every parent will think it well worth his while to attend to the smallest circumstances in education, which can prevent its seizing hold of the minds of his children.

In children, as in men, a taste for gaming arises from the want of better occupation, or of proper emotion to relieve them from the pains and penalties of idleness; both the vain and indolent are prone to this taste from different causes. The idea of personal merit is insensibly connected with what is called *good luck*, and before avarice absorbs every other feeling, vanity forms no inconsiderable part of the charm which fixes such numbers to the gaming-table. Indolent persons are fond of games of chance, because they feel themselves roused agreeably from their habitual state of apathy, or because they perceive, that at these contests, without any mental exertion, they are equal, perhaps superior, to their competitors.

Happy they, who have early been inspired with a taste for science and literature! They will have a constant succession of agreeable ideas; they will find endless variety in the commonest objects which surround them; and feeling that every day of their lives they have sufficient amusement, they will require no extraordinary excitations, no holiday pleasures. They who have

learnt, from their own experience, a just confidence in their own powers; they who have tasted the delights of well-earned praise, will not lightly trust to *chance*, for the increase of self-approbation; nor will those pursue, with too much eagerness, the precarious triumphs of fortune, who know, that in their usual pursuits, it is in their own power to command success proportioned to their exertions. Perhaps it may be thought, that we should have deferred our eulogium upon literature till we came to speak of Tasks; but if there usually appears but little connection in a child's mind, between books and toys, this must be attributed to his having had bad books and bad toys. In the hands of a judicious instructor, no means are too small to be useful; every thing is made conducive to his purposes, and instead of useless baubles, his pupils will be provided with play things which may instruct, and with occupations which may at once amuse and improve the understanding.

It would be superfluous to give a greater variety of instances of the sorts of amusements which are advantageous; we fear that we have already given too many, and that we have hazarded some observations, which will be thought too pompous for a chapter upon Toys. We intended to have added to this chapter an inventory of the present most fashionable articles in our toy-shops, and *a list of the new assortment*, to speak in the true style of an advertisement; but we are obliged to defer this for the present; upon a future occasion we shall submit it to the judgment of the public. A revolution, *even in toy-shops*, should not be attempted,

unless there appear a moral certainty that we both may, and can, change for the better. The danger of doing too much in education, is greater even than the danger of doing too little. As the merchants in France answered to Colbert, when he desired to know "how he could best assist them," children might, perhaps, reply to those who are most officious to amuse them, "Leave us to ourselves."

CHAPTER II

TASKS

"Why don't you get your task, instead of playing with your playthings from morning till night? You are grown too old now to do nothing but play. It is high time you should learn to read and write, for you cannot be a child all your life, child; so go and fetch your *book*, and learn your *task*."

This angry apostrophe is probably addressed to a child, at the moment when he is intent upon some agreeable occupation, which is now to be stigmatized with the name of Play. Why that word should all at once change its meaning; why that should now be a crime, which was formerly a virtue; why he, who had so often been desired to *go and play*, should now be reviled for his obedience, the young casuist is unable to discover. He hears that he is no longer a child: this he is willing to believe; but the consequence is alarming. Of the new duties incumbent upon his situation, he has but yet a confused idea. In his manly character, he is not yet thoroughly perfect: his pride would make him despise every thing that is childish, but no change has yet been wrought in the inward man, and his old tastes and new ambition, are in direct opposition. Whether to learn to read, be a dreadful thing or not, is a question he cannot immediately solve; but if his reasoning faculty be suspended,

there is yet a power secretly working within him, by which he will involuntarily be governed. This power is the power of association: of its laws, he is, probably, not more ignorant than his tutor; nor is he aware that whatever word or idea comes into his mind, with any species of pain, will return, whenever it is recalled to his memory, with the same feelings. The word Task, the first time he hears it, is an unmeaning word, but it ceases to be indifferent to him the moment he hears it pronounced in a terrible voice. "Learn your task," and "fetch your book," recur to his recollection with indistinct feelings of pain; and hence, without further consideration, he will be disposed to dislike both books and tasks; but his feelings are the last things to be considered upon this occasion; the immediate business, is to teach him to read. A new era in his life now commences. The age of learning begins, and begins in sorrow. The consequences of a bad beginning, are proverbially ominous; but no omens can avert his fate, no omens can deter his tutor from the undertaking; the appointed moment is come; the boy is four years old, and he must learn to read. Some people, struck with a panic fear, lest their children should never learn to read and write, think that they cannot be in too great a hurry to teach them. Spelling-books, grammars, dictionaries, rods and masters, are collected; nothing is to be heard of in the house but tasks; nothing is to be seen but tears.

"No tears! no tasks! no masters! nothing upon compulsion!" say the opposite party in education. "Children must be left

entirely at liberty; they will learn every thing better than you can teach them; their memory must not be overloaded with trash; their reason must be left to grow."

Their reason will never grow, unless it be exercised, is the reply; their memory must be stored whilst they are young, because, in youth, the memory is most tenacious. If you leave them at liberty for ever, they will never learn to spell; they will never learn Latin; they will never learn Latin grammar; yet, they must learn Latin grammar, and a number of other disagreeable things; therefore, we must give them tasks and task-masters.

In all these assertions, perhaps, we shall find a mixture of truth and error; therefore, we had better be governed by neither party, but listen to both, and examine arguments unawed by authority. And first, as to the panic fear, which, though no argument, is a most powerful motive. We see but few examples of children so extremely stupid as not to have been able to learn to read and write between the years of three and thirteen; but we see many whose temper and whose understanding have been materially injured by premature or injudicious instruction; we see many who are disgusted, perhaps irrecoverably, with literature, whilst they are fluently reading books which they cannot comprehend, or learning words by rote, to which they affix no ideas. It is scarcely worth while to speak of the vain ambition of those who long only to have it said, that their children read sooner than those of their neighbours do; for, supposing their utmost wish to be gratified, that their son could read before the age when children commonly

articulate, still the triumph must be of short duration, the fame confined to a small circle of "foes and friends," and, probably, in a few years, the memory of the phenomenon would remain only with his doting grandmother. Surely, it is the use which children make of their acquirements which is of consequence, not the possessing them a few years sooner or later. A man, who, during his whole life, could never write any thing that was worth reading, would find it but poor consolation for himself, his friends, or the public, to reflect, that he had been in joining-hand before he was five years old.

As it is usually managed, it is a dreadful task indeed to learn, and, if possible, a more dreadful task to teach to read. With the help of unters, and coaxing, and gingerbread, or by dint of reiterated pain and terror, the names of the four-and-twenty letters of the alphabet, are, perhaps, in the course of some weeks, firmly fixed in the pupil's memory. So much the worse; all these names will disturb him, if he have common sense, and at every step must stop his progress. To begin with the vowels: each of these have several different sounds, and, consequently, ought to have several names, or different signs, to distinguish them in different circumstances. In the first lesson of the spelling book, the child begins with *a-b*, makes *ab*; *b-a* makes *ba*. The inference, if any general inference can be drawn from this lesson, is, that when *a* comes before *b*, it has one sound, and after *b*, it has another sound; but this is contradicted by *and by*, and it appears that *a* after *b*, has various sounds, as in *ball*, in *bat*, in *bare*. The

letter *i* in *fire*, is *i*, as we call it in the alphabet, but in *fir*, it is changed; in *pin*, it is changed again; so that the child, being ordered to affix to the same sign a variety of sounds and names, and not knowing in what circumstances to obey, and in what to disregard the contradictory injunctions imposed upon him, he pronounces sounds at hazard, and adheres positively to the last ruled case, or maintains an apparently sullen, or truly philosophic and sceptical silence. Must *e* in *pen*, and *e* in *where*, and *e* in *verse*, and *e* in *fear*, all be called *e* alike? The child is patted on the head for reading *u* as it ought to be pronounced in *future*; but if, remembering this encouragement, the pupil should venture to pronounce *u* in *gun*, and *bun*, in the same manner, he will, inevitably, be disgraced. Pain and shame, impress precepts upon the mind: the child, therefore, is intent upon remembering the new sound of *u* in *bun*; but when he comes to *busy*, and *burial*, and *prudence*, his last precedent will lead him fatally astray, and he will again be called a *dunce*. *O*, in the exclamation *Oh!* is happily called by its alphabetical name; but in *to*, we can hardly know it again, and in *morning* and *wonder*, it has a third and a fourth additional sound. The amphibious letter *y*, which is either a vowel or a consonant, has one sound in one character, and two sounds in the other; as a consonant, it is pronounced as in *yesterday*; in *try*, it is sounded as *i*; in *any*, and in the termination of many other words, it is sounded like *e*. Must a child know all this by intuition, or must it be whipt into him? But he must know a great deal more, before he can read the most common words.

What length of time should we allow him for learning, when *c* is to be sounded like *k*, and when like *s*? and how much longer time shall we add for learning, when *s* shall be pronounced *sh*, as in *sure*, or *z*, as in *has*; the sound of which last letter *z*, he cannot, by any conjuration, obtain from the name *zed*, the only name by which he has been taught to call it? How much time shall we allow a patient tutor for teaching a docile pupil, when *g* is to be sounded soft, and when hard? There are many carefully worded rules in the spelling-books, specifying before what letters, and in what situations, *g* shall vary in sound; but, unfortunately, these rules are difficult to be learned by heart, and still more difficult to understand. These laws, however positive, are not found to be of universal application, or at least, a child has not always wit or time to apply them upon the spur of the occasion. In coming to the words *ingenious gentleman, get a good grammar*, he may be puzzled by the nice distinctions he is to make in pronunciation in cases apparently similar; but he has not yet become acquainted with all the powers of this privileged letter: in company with *h*, it assumes the character of *f*, as in *tough*; another time he meets it, perhaps, in the same company, in the same place, and, as nearly as possible, in the same circumstances, as in the word *though*; but now *g* is to become a silent letter, and is to pass incognito, and the child will commit an unpardonable error, if he claimed the incognito as his late acquaintance *f*. Still, all these are slight difficulties; a moment's reflection must convince us, that by teaching the common names of every consonant in

the alphabet, we prepare a child for misery, when he begins to spell or read. A consonant, as sayeth the spelling-book, is a letter which cannot be pronounced without a vowel before or after it: for this reason, *B*, is called *be*, and *L*, *el*; but why the vowel should come first in the one case, or last in the second, we are not informed; nor are we told why the names of some letters have no resemblance whatever to their sounds, either with a vowel before or after them. Suppose, that after having learned the alphabet, a child was to read the words

Here is some apple-pye

He would pronounce the letters thus:

Acheare ies esoeme apepeelee pewie

With this pronunciation the child would never decipher these simple words. It will be answered, perhaps, that no child is expected to read as soon as he has learnt his alphabet: a long initiation of monosyllabic, dissyllabic, trissyllabic, and polysyllabic words is previously to be submitted to; nor, after this inauguration, are the novices capable of performing with propriety the ceremony of reading whole words and sentences.

By a different method of teaching, all this waste of labour and of time, all this confusion of rules and exceptions, and all the consequent confusion in the understanding of the pupil, may be avoided.

In teaching a child to read, every letter should have a precise single sound annexed to its figure; this should never vary. Where two consonants are joined together, so as to have but one sound, as ph, sh, &c. the two letters should be coupled together by a distinct invariable mark. Letters that are silent should be marked in such a manner as to point out to the child that they are not to be sounded. Upon these simple rules our method of teaching to read has been founded. The signs or marks, by which these distinctions are to be effected, are arbitrary, and may be varied as the teacher chooses; the addition of a single point above or below the common letters is employed to distinguish the different sounds that are given to the same letter, and a mark underneath such letters as are to be omitted, is the only apparatus necessary. These marks were employed by the author in 1776, before he had seen Sheridan's, or any similar dictionary; he has found that they do not confuse children as much as figures, because when dots are used to distinguish sounds, there is only a change of place, and no change of form: but any person that chooses it, may substitute figures instead of dots. It should, however, be remembered, that children must learn to distinguish the figures before they can be useful in discriminating the words.

All these sounds, and each of the characters which denote

them, should be distinctly known by a child before we begin to teach him to read. And here at the first step we must entreat the teacher to have patience; to fix firmly in her mind, we say *her* mind, because we address ourselves to mothers; that it is immaterial whether a child learns this alphabet in six weeks or in six months; at all events, let it not be inculcated with restraint, or made tiresome, lest it should retard the whole future progress of the pupil. We do not mean to recommend the custom of teaching in play, but surely a cheerful countenance is not incompatible with application.

The three sounds of the letter (a) should first be taught; they may be learned by the dullest child in a week, if the letters are shown to him for a minute or two, twice a day. Proper moments should be chosen when the child is not intent upon any thing else; when other children have appeared to be amused with reading; when the pupil himself appears anxious to be instructed. As soon as he is acquainted with the sounds of (a) and with their distinguishing marks, each of these sounds should be formed into syllables, with each of the consonants; but we should never name the consonants by their usual names; if it be required to point them out by sounds, let them resemble the real sounds or powers of the consonants; but in fact it will never be *necessary* to name the consonants separately, till their powers, in combination with the different vowels, be distinctly acquired. It will then be time enough to teach the common names of the letters. To a person unacquainted with the principles upon which this mode

of teaching is founded, it must appear strange, that a child should be able to read before he knows the names of his letters; but it has been ascertained, that the names of the letters are an incumbrance in teaching a child to read.

In the quotation from Mrs. Barbauld, at the bottom of the alphabetical tables, there is a stroke between the letters *b* and *r* in *February*, and between *t* and *h*, in *there*, to show that these letters are to be sounded together, so as to make one sound. The same is to be observed as to (*ng*) in the word *long*, and also as to the syllable *ing*, which, in the table No. 4, column 4, is directed to be taught as one sound. The mark (.) of obliteration, is put under (*y*) in the word *days*, under *e* final in *there*, and also under one of the *l*'s and the (*w*) in *yellow*, to show that these letters are not to be pronounced. The exceptions to this scheme of articulation are very few; such as occur, are marked, with the number employed in Walker's dictionary, to denote the exception, to which excellent work, the teacher will, of course, refer.

Parents, at the first sight of this new alphabet, will perhaps tremble lest they should be obliged to learn the whole of it before they begin to teach their children: but they may calm their apprehensions, for they need only point out the letters in succession to the child, and sound them as they are sounded in the words annexed to the letters in the table, and the child will soon, by repetition, render the marks of the respective letters familiar to the teacher. We have never found any body complain

of difficulty, who has gone on from letter to letter along with the child who was taught.

As soon as our pupil knows the different sounds of (*a*) combined in succession with all the consonants, we may teach him the rest of the vowels joined with all the consonants, which will be a short and easy work. Our readers need not be alarmed at the apparent slowness of this method: six months, at the rate of four or five minutes each day, will render all these combinations perfectly familiar. One of Mrs. Barbauld's lessons for young children, carefully marked in the same manner as the alphabet, should, when they are well acquainted with the sounds of each of the vowels with each of the consonants, be put into our pupil's hands.⁷

The sound of three or four letters together, will immediately become familiar to him; and when any of the less common sounds of the vowels, such as are contained in the second table, and the terminating sounds, *tion*, *ly*, &c. occur, they should be read to the child, and should be added to what he has got by rote from time to time. When all these marks and their corresponding sounds are learnt, the primer should be abandoned, and from that time the child will be able to read slowly the most difficult words in the language. We must observe, that the mark of obliteration is of the greatest service; it is a clue to the whole labyrinth of intricate and uncouth orthography. The word though, by the

⁷ Some of these lessons, and others by the authors, will shortly be printed, and marked according to this method.

obliteration of three letters, may be as easily read as *the* or *that*.

It should be observed that all people, before they can read fluently, have acquired a knowledge of the general appearance of most of the words in the language, independently of the syllables of which they are composed. Seven children in the author's family were taught to read in this manner, and three in the common method; the difference of time, labour, and sorrow, between the two modes of learning, appeared so clearly, that we can speak with confidence upon the subject. We think that nine-tenths of the labour and disgust of learning to read, may be saved by this method; and that instead of frowns and tears, the usual harbingers of learning, cheerfulness and smiles may initiate willing pupils in the most difficult of all human attainments.

A and H, at four and five years old, after they had learned the alphabet, without having ever combined the letters into syllables, were set to read one of Mrs. Barbauld's little books. After being employed two or three minutes every day, for a fortnight, in making out the words of this book, a paper with a few raisins well concealed in its folds, was given to each of them, with these words printed on the outside of it, marked according to our alphabet:

"Open this, and eat what you find in it."

In twenty minutes, they read it distinctly without any assistance.

The step from reading with these marks, to reading without them, will be found very easy. Nothing more is necessary, than

to give children the same books, without marks, which they can read fluently with them.

Spelling comes next to reading. New trials for the temper; new perils for the understanding; positive rules and arbitrary exceptions; endless examples and contradictions; till at length, out of all patience with the stupid docility of his pupil, the tutor perceives the absolute necessity of making him get by heart, with all convenient speed, every word in the language. The formidable columns in dread succession arise a host of foes; two columns a day, at least, may be conquered. Months and years are devoted to the undertaking; but after going through a whole spelling-book, perhaps a whole dictionary, till we come triumphantly to spell *Zeugma*, we have forgotten to spell *Abbot*, and we must begin again with *Abasement*. Merely the learning to spell so many unconnected words, without any assistance from reason or analogy, is nothing, compared with the difficulty of learning the explanation of them by rote, and the still greater difficulty of understanding the meaning of the explanation. When a child has got by rote,

"Midnight, the *depth* of night;"

"Metaphysics, the science which treats of immaterial beings, and of forms in general abstracted from matter;"

has he acquired any distinct ideas, either of midnight or of metaphysics? If a boy had eaten rice pudding, till he fancied himself tolerably well acquainted with rice, would he find his

knowledge much improved, by learning from his spelling-book, the words

"Rice, a foreign esculent grain?"

Yet we are surprised to discover, that men have so few accurate ideas, and that so many learned disputes originate in a confused or improper use of words.

"All this is very true," says a candid schoolmaster; "we see the evil, but we cannot new-model the language, or write a perfect philosophical dictionary; and, in the mean time, we are bound to teach children to spell, which we do with the less reluctance, because, though we allow that it is an arduous task, we have found from experience, that it can be accomplished, and that the understandings of many of our pupils, survive all the perils to which you think them exposed during the operation."

The understandings may, and do, survive the operation; but why should they be put in unnecessary danger? and why should we early disgust children with literature, by the pain and difficulty their first lessons? We are convinced, that the business of learning to spell, is made much more laborious to children than it need to be: it may be useful to give them five or six words every day to learn by heart, but more only loads their memory; and we should, at first, select words of which they know the meaning, and which occur most frequently in reading or conversation. The alphabetical list of words in a spelling-

book, contains many which are not in common use, and the pupil forgets these as fast as he learns them. We have found it entertaining to children, to ask them to spell any short sentence as it has been accidentally spoken. "Put this book on that table." Ask a child how he would spell these words, if he were obliged to write them down, and you introduce into his mind the idea that he must learn to spell, before he can make his words and thoughts understood in writing. It is a good way to make children write down a few words of their own selection every day, and correct the spelling; and also after they have been reading, whilst the words are yet fresh in their memory, we may ask them to spell some of the words which they have just seen. By these means, and by repeating, at different times in the day, those words which are most frequently wanted, his vocabulary will be pretty well stocked without its having cost him many tears. We should observe that children learn to spell more by the eye than by the ear, and that the more they read and write, the more likely they will be to remember the combination of letters in words which they have continually before their eyes, or which they feel it necessary to represent to others. When young people begin to write, they first feel the use of spelling, and it is then that they will learn it with most ease and precision. Then the greatest care should be taken to look over their writing, and to make them correct every word in which they have made a mistake; because, bad habits of spelling, once contracted, can scarcely be cured: the understanding has nothing to do with the business, and when the

memory is puzzled between the rules of spelling right, and the habits of spelling wrong, it becomes a misfortune to the pupil to write even a common letter. The shame which is annexed to bad spelling, excites young people's attention, as soon as they are able to understand, that it is considered as a mark of ignorance and ill breeding. We have often observed, that children listen with anxiety to the remarks that are made upon this subject in their presence, especially when the letters or notes of *grown up people*, are criticised.

Some time ago, a lady, who was reading a newspaper, met with the story of an ignorant magistrate, who gave for his toast, at a public dinner, the two K's, for the King and Constitution. "How very much ashamed the man must have felt, when all the people laughed at him for his mistake! they must all have seen that he did not know how to spell; and what a disgrace for a magistrate too!" said a boy who heard the anecdote. It made a serious impression upon him. A few months afterwards, he was employed by his father in an occupation which was extremely agreeable to him, but in which he continually felt the necessity of spelling correctly. He was employed to send messages by a telegraph; these messages he was obliged to write down hastily, in little journals kept for the purpose; and as these were seen by several people, when the business of the day came to be reviewed, the boy had a considerable motive for orthographical exactness. He became extremely desirous to teach himself, and consequently his success was from that moment certain. As to

the rest, we refer to Lady Carlisle's comprehensive maxim, "Spell well if you can."

It is undoubtedly of consequence, to teach the rudiments of literary education early, to get over the first difficulties of reading, writing, and spelling; but much of the anxiety and bustle, and labour of teaching these things, may be advantageously spared. If more attention were turned to the general cultivation of the understanding, and if more pains were taken to make literature agreeable to children, there would be found less difficulty to excite them to mental exertion, or to induce the habits of persevering application.

When we speak of rendering literature agreeable to children, and of the danger of associating pain with the sight of a book, or with the sound of the word *task*, we should at the same time avoid the error of those who, in their first lessons, accustom their pupils to so much amusement, that they cannot help afterwards feeling disgusted with the sobriety of instruction. It has been the fashion of late to attempt teaching every thing to children in play, and ingenious people have contrived to insinuate much useful knowledge without betraying the design to instruct; but this system cannot be pursued beyond certain bounds without many inconveniences. The habit of being amused not only increases the desire for amusement, but it lessens even the relish for pleasure; so that the mind becomes passive and indolent, and a course of perpetually increasing stimulus is necessary to awaken attention. When dissipated habits are required, the pupil loses

power over his own mind, and, instead of vigorous voluntary exertion, which he should be able to command, he shows that wayward imbecility, which can think successfully only by fits and starts: this paralytic state of mind has been found to be one of the greatest calamities attendant on what is called genius; and injudicious education creates or increases this disease. Let us not therefore humour children in this capricious temper, especially if they have quick abilities: let us give rewards proportioned to their exertions with uniform justice, but let us not grant bounties in education, which, however they may appear to succeed in effecting partial and temporary purposes, are not calculated to ensure any consequences permanently beneficial. The truth is, that useful knowledge cannot be obtained without labour; that attention long continued is laborious, but that without this labour nothing excellent can be accomplished. Excite a child to attend in earnest for a short time, his mind will be less fatigued, and his understanding more improved, than if he had exerted but half the energy twice as long: the degree of pain which he may have felt will be amply and properly compensated by his success; this will not be an arbitrary, variable reward, but one within his own power, and that can be ascertained by his own feelings. Here is no deceit practised, no illusion; the same course of conduct may be regularly pursued through the whole of his education, and his confidence in his tutor will progressively increase. On the contrary, if, to entice him to enter the paths of knowledge, we strew them with flowers, how will he feel when he must force his

way through thorns and briars!

There is a material difference between teaching children in play, and making learning a task; in the one case we associate factitious pleasure, in the other factitious pain, with the object: both produce pernicious effects upon the temper, and retard the natural progress of the understanding. The advocates in favour of "scholastic badinage" have urged, that it excites an interest in the minds of children similar to that which makes them endure a considerable degree of labour in the pursuit of their amusements. Children, it is said, work hard at play, therefore we should let them play at work. Would not this produce effects the very reverse of what we desire? The whole question must at last depend upon the meaning of the word play: if by play be meant every thing that is not usually called a task, then undoubtedly much may be learned at play: if, on the contrary, we mean by the expression to describe that state of fidgeting idleness, or of boisterous activity, in which the intellectual powers are torpid, or stunned with unmeaning noise, the assertion contradicts itself. At play so defined, children can learn nothing but bodily activity; it is certainly true, that when children are interested about any thing, whether it be about what we call a trifle, or a matter of consequence, they will exert themselves in order to succeed; but from the moment the attention is fixed, no matter on what, children are no longer at idle play, they are at active work.

S — , a little boy of nine years old, was standing without any book in his hand, and seemingly idle; he was amusing himself

with looking at what he called a rainbow upon the floor; he begged his sister M – to look at it; then he said he wondered what could make it; how it came there. The sun shone bright through the window; the boy moved several things in the room, so as to place them sometimes between the light and the colours which he saw upon the floor, and sometimes in a corner of the room where the sun did not shine. As he moved the things, he said, "This is not it;" "nor this;" "this has'n't any thing to do with it." At last he found, that when he moved a tumbler of water out of the place where it stood, his rainbow vanished. Some violets were in the tumbler; S – thought they might be the cause of the colours which he saw upon the floor, or, as he expressed it, "Perhaps these may be the thing." He took the violets out of the water; the colours remained upon the floor. He then thought that "it might be the water." He emptied the glass; the colours remained, but they were fainter. S – immediately observed, that it was the water and glass together that made the rainbow. "But," said he, "there is no glass in the sky, yet there is a rainbow, so that I think the water alone would do, if we could but hold it together without the glass. Oh I know how I can manage." He poured the water slowly out of the tumbler into a basin, which he placed where the sun shone, and he saw the colours on the floor twinkling behind the water as it fell: this delighted him much; but he asked why it would not do when the sun did not shine. The sun went behind a cloud whilst he was trying his experiments: "There was light," said he, "though there was no sunshine." He then said he

thought that the different thickness of the glass was the cause of the variety of colours: afterwards he said he thought that the clearness or muddiness of the different drops of water was the cause of the different colours.

A rigid preceptor, who thinks that every boy must be idle who has not a Latin book constantly in his hand, would perhaps have reprimanded S – for wasting his time *at play*, and would have summoned him from his rainbow to his *task*; but it is very obvious to any person free from prejudices, that this child was not idle whilst he was meditating upon the rainbow on the floor; his attention was fixed; he was reasoning; he was trying experiments. We may call this *play* if we please, and we may say that Descartes was at play, when he first verified Antonio de Dominis bishop of Spalatro's treatise of the rainbow, by an experiment with a glass Globe:⁸ and we may say that Buffon was idle, when his pleased attention was first caught with a landscape of green shadows, when one evening at sunset he first observed that the shadows of trees, which fell upon a white wall, were green. He was first delighted with the exact representation of a green arbour, which seemed as if it had been newly painted on the wall. Certainly the boy with his rainbow on the floor was as much amused as the philosopher with his coloured shadows; and, however high sounding the name of Antonio de Dominis, bishop of Spalatro, it does not alter the business in the least; he could have exerted only his *utmost attention* upon the theory of the rainbow, and the

⁸ See Priestley's History of Vision, vol. i. p. 51.

child did the same. We do not mean to compare the powers of reasoning, or the abilities of the child and the philosopher; we would only show that the same species of attention was exerted by both.

To fix the attention of children, or, in other words, to interest them about those subjects to which we wish them to apply, must be our first object in the early cultivation of the understanding. This we shall not find a difficult undertaking if we have no false associations, no painful recollections to contend with. We can connect any species of knowledge with those occupations which are immediately agreeable to young people: for instance, if a child is building a house, we may take that opportunity to teach him how bricks are made, how the arches over doors and windows are made, the nature of the keystone and butments of an arch, the manner in which all the different parts of the roof of a house are put together, &c.; whilst he is learning all this he is eagerly and seriously attentive, and we educate his understanding in the best possible method. But if, mistaking the application of the principle, that literature should be made agreeable to children, we should entice a child to learn his letters by a promise of a gilt coach, or by telling him that he would be the cleverest boy in the world if he could but learn the letter *A*, we use false and foolish motives; we may possibly, by such means, effect the immediate purpose, but we shall assuredly have reason to repent of such imprudent deceit. If the child reasons at all, he will be content after his first lesson with being

"the cleverest boy in the world," and he will not, on a future occasion, hazard his fame, having much to lose, and nothing to gain; besides, he is now master of a gilt coach, and some new and larger reward must be proffered to excite his industry. Besides the disadvantage of early exhausting our stock of incitements, it is dangerous in teaching to humour pupils with a variety of objects by way of relieving their attention. The pleasure of *thinking*, and much of the profit, must frequently depend upon our preserving the greatest possible connection between our ideas. Those who allow themselves to start from one object to another, acquire such dissipated habits of mind, that they cannot, without extreme difficulty and reluctance, follow any connected train of thought. You cannot teach those who will not follow the chain of your reasons; upon the connection of our ideas, useful memory and reasoning must depend. We will give you an instance: arithmetic is one of the first things that we attempt to teach children. In the following dialogue, which passed between a boy of five years old and his father, we may observe that, till the child followed his father's train of ideas, he could not be taught.

Father. S —, how many can you take from one?

S — . None.

Father. None! Think; can you take nothing from one?

S — . None, except that one.

Father. Except! Then you can take one from one?

S — . Yes, *that one*.

Father. How many then can you take from one?

S – . One.

Father. Very true; but now, can you take two from one?

S – . Yes, if they were figures I could, with a rubber-out. (This child had frequently sums written for him with a black lead pencil, and he used to rub out his figures when they were wrong with Indian rubber, which he had heard called *rubber-out*.)

Father. Yes, you could; but now we will not talk of figures, we will talk of things. There may be one horse or two horses, or one man or two men.

S – . Yes, or one coat or two coats.

Father. Yes, or one thing or two things, no matter what they are. Now, could you take two things from one thing?

S – . Yes, if there were three things I could take away two things, and leave one.

His Father took up a cake from the tea-table.

Father. Could I take two cakes from this one cake?

S – . You could take two pieces.

His Father divided the cake into halves, and held up each half so that the child might distinctly see them.

Father. What would you call these two pieces?

S – . Two cakes.

Father. No, not two cakes.

S – . Two biscuits.

Father. Holding up a whole biscuit: What is this?

S – . A thing to eat.

Father. Yes, but what would you call it?

S – . A biscuit.

His Father broke it into halves, and showed one half.

Father. What would you call this?

S – . was silent, and his sister was applied to, who answered, "Half a biscuit."

Father. Very well; that's all at present.

The father prudently stopped here, that he might not confuse his pupil's understanding. Those only who have attempted to teach children can conceive how extremely difficult it is to fix their attention, or to make them seize the connection of ideas, which it appears to us almost impossible to miss. Children are well occupied in examining external objects, but they must also attend to words as well as things. One of the great difficulties in early instruction arises from the want of words: the pupil very often has acquired the necessary ideas, but they are not associated in his mind with the words which his tutor uses; these words are then to him mere sounds, which suggest no correspondent thoughts. Words, as M. Condillac well observes,⁹ are essential to our acquisition of knowledge; they are the medium through which one set of beings can convey the result of their experiments and observations to another; they are, in all mental processes, the algebraic signs which assist us in solving the most difficult problems. What agony does a foreigner, knowing himself to be a man of sense, appear to suffer, when, for want of language, he cannot in conversation communicate his

⁹ "Art de Penser."

knowledge, explain his reasons, enforce his arguments, or make his wit intelligible? In vain he has recourse to the language of action. The language of action, or, as Bacon calls it, of "transitory hieroglyphic," is expressive, but inadequate. As new ideas are collected in the mind, new signs are wanted, and the progress of the understanding would be early and fatally impeded by the want of language. M. de la Condamine tells us that there is a nation who have no sign to express the number three but this word, *poellartarrorincourac*. These people having begun, as Condillac observes, in such an incommodious manner, it is not surprising that they have not advanced further in their knowledge of arithmetic: they have got no further than the number three; their knowledge of arithmetic stops for ever at *poellartarrorincourac*. But even this cumbersome sign is better than none. Those who have the misfortune to be born deaf and dumb, continue for ever in intellectual imbecility. There is an account in the *Memoires de l'Academie Royale*, p. xxii-xxiii, 1703, of a young man born deaf and dumb,¹⁰ who recovered his hearing at the age of four-and-twenty, and who, after employing himself in repeating low to himself the words which he heard others pronounce, at length broke silence in company, and declared that he could talk. His conversation was but imperfect; he was examined by several able theologians, who chiefly questioned him on his ideas of God, the soul, and the morality or immorality of actions. It

¹⁰ See Condillac's *Art de Penser*. In the chapter "on the use of signs," this young man is mentioned.

appeared that he had not thought upon any of these subjects; he did not distinctly know what was meant by death, and he never thought of it. He seemed to pass a merely animal life, occupied with sensible, present objects, and with the few ideas which he received by his sense of sight; nor did he seem to have gained as much knowledge as he might have done, by the comparison of these ideas; yet it is said that he did not appear naturally deficient in understanding.

Peter, the wild boy, who is mentioned in Lord Monboddo's *Origin of Language*,¹¹ had all his senses in remarkable perfection. He lived at a farm house within half a mile of us in Hertfordshire for some years, and we had frequent opportunities of trying experiments upon him. He could articulate imperfectly a few words, in particular, *King George*, which words he always accompanied with an imitation of the bells, which rang at the coronation of George the Second; he could in a rude manner imitate two or three common tunes, but without words. Though his head, as Mr. Wedgewood and many others had remarked, resembled that of Socrates, he was an idiot: he had acquired a few automatic habits of rationality and industry, but he could never be made to work at any continued occupation: he would shut the door of the farm-yard five hundred times a day, but he would not reap or make hay. Drawing water from a neighbouring river was the only domestic business which he regularly pursued. In 1779 we visited him, and tried the following experiment. He

¹¹ Vol. II.

was attended to the river by a person who emptied his buckets repeatedly after Peter had repeatedly filled them. A shilling was put before his face into one of the buckets when it was empty; he took no notice of it, but filled it with water and carried it homeward: his buckets were taken from him before he reached the house and emptied on the ground; the shilling, which had fallen out, was again shown to him, and put into the bucket. Peter returned to the river again, filled his bucket and went home; and when the bucket was emptied by the maid at the house where he lived, he took the shilling and laid it in a place where he was accustomed to deposit the presents that were made to him by curious strangers, and whence the farmer's wife collected the price of his daily exhibition. It appeared that this savage could not be taught to reason for want of language.

Rousseau declaims with eloquence, and often with justice, against what he calls a knowledge of words. Words without correspondent ideas, are worse than useless; they are counterfeit coin, which imposes upon the ignorant and unwary; but words, which really represent ideas, are not only of current use, but of sterling value; they not only show our present store, but they increase our wealth, by keeping it in continual circulation; both the principal and the interest increase together. The importance of signs and words, in our reasonings, has been eloquently explained, since the time of Condillac, by Stewart. We must use the ideas of these excellent writers, because they are just and applicable to the art of education; but whilst we use, it is with

proper acknowledgments that we borrow, what we shall never be able to return.

It is a nice and difficult thing in education, to proportion a child's vocabulary exactly to his knowledge, dispositions, or conformation; our management must vary; some will acquire words too quickly, others too slowly. A child who has great facility in pronouncing sounds, will, for that reason, quickly acquire a number of words, whilst those whose organs of speech are not so happily formed, will from that cause alone, be ready in forming a copious vocabulary. Children who have many companions, or who live with people who converse a great deal, have more motive, both from sympathy and emulation, to acquire a variety of words, than those who live with silent people, and who have few companions of their own age. All these circumstances should be considered by parents, before they form their judgment of a child's capacity from his volubility or his taciturnity. Volubility can easily be checked by simply ceasing to attend to it, and taciturnity may be vanquished by the encouragements of praise and affection: we should neither be alarmed at one disposition nor at the other, but steadily pursue the system of conduct which will be most advantageous to both. When a prattling, vivacious child, pours forth a multiplicity of words without understanding their meaning, we may sometimes beg to have an explanation of a few of them, and the child will then be obliged to think, which will prevent him from talking nonsense another time. When a thoughtful boy, who is in the

habit of observing every object he sees, is at a loss for words to express his ideas, his countenance usually shows to those who can read the countenance of children, that he is not stupid; therefore, we need not urge him to talk, but assist him judiciously with words "in his utmost need: " at the same time we should observe carefully, whether he grows lazy when we assist him; if his stock of words does not increase in proportion to the assistance we give, we should then stimulate him to exertion, or else he will become habitually indolent in expressing his ideas; though he may *think* in a language of his own, he will not be able to understand our language when we attempt to teach him: this would be a source of daily misery to both parties.

When children begin to read, they seem suddenly to acquire a great variety of words: we should carefully examine whether they annex the proper meaning to these which are so rapidly collected. Instead of giving them lessons and tasks to get by rote, we should cautiously watch over every new phrase and every new word which they learn from books. There are but few books so written that young children can comprehend a single sentence in them without much explanation. It is tiresome to those who hear them read to explain every word; it is not only tiresome, but difficult; besides, the progress of the pupil seems to be retarded; the grand business of reading, of getting through the book, is impeded; and the tutor, more impatient than his pupil, says, "Read on, I cannot stop to explain *that* to you now. You will understand the meaning of the sentence if you will read to the end of the page. You have

not read three lines this half hour; we shall never get on at this rate."

A certain dame at a country school, who had never been able to compass the word Nebuchadnezzar, used to desire her pupils to "call it Nazareth, and let it pass."

If they be obliged to pass over words without comprehending them in books, they will probably do the same in conversation; and the difficulty of teaching such pupils, and of understanding what they say, will be equally increased. At the hazard of being tedious, we must dwell a little longer upon this subject, because much of the future capacity of children seems to depend upon the manner in which they first acquire language. If their language be confused, so will be their thoughts; and they will not be able to reason, to invent, or to write, with more precision and accuracy than they speak. The first words that children learn are the names of things; these are easily associated with the objects themselves, and there is little danger of mistake or confusion. We will not enter into the grammatical dispute concerning the right of precedency, amongst pronoun substantives and verbs; we do not know which came first into the mind of man; perhaps, in different minds, and in different circumstances, the precedency must have varied; but this seems to be of little consequence; children see actions performed, and they act themselves; when they want to express their remembrance of these actions, they make use of the sort of words which we call verbs. Let these words be strictly associated with the ideas

which they mean to express, and no matter whether children know any thing about the disputes of grammarians, they will understand rational grammar in due time, simply by reflecting upon their own minds. This we shall explain more fully when we speak hereafter of grammar; we just mention the subject here, to warn preceptors against puzzling their pupils too early with grammatical subtleties.

If any person unused to mechanics was to read Dr. Desagulier's description of the manner in which a man walks, the number of a-b-c's, and the travels of the centre of gravity, it would so amaze and confound him, that he would scarcely believe he could ever again perform such a tremendous operation as that of walking. Children, if they were early to hear grammarians talk of the parts of speech, and of syntax, would conclude, that to speak must be one of the most difficult arts in the world; but children, who are not usually so unfortunate as to have grammarians for their preceptors, when they first begin to speak, acquire language, without being aware of the difficulties which would appear so formidable in theory. A child points to, or touches, the table, and when the word table is repeated, at the same instant he learns the name of the thing. The facility with which a number of names are thus learned in infancy is surprising; but we must not imagine that the child, in learning these names, has acquired much knowledge; he has prepared himself to be taught, but he has not yet learnt any thing accurately. When a child sees a guinea and a shilling, and smiling

says, "That's a guinea, mama! and that's a shilling!" the mother is pleased and surprised by her son's intelligence, and she gives him credit for more than he really possesses. We have associated with the words guinea and shilling a number of ideas, and when we hear the same words pronounced by a young child, we perhaps have some confused belief that he has acquired the same ideas that we have; hence we are pleased with the mere sound of words of high import from infantine lips.

Children who are delighted in their turn by the expression of pleasure in the countenance of others, repeat the things which they perceive have pleased; and thus their education is begun by those who first smile upon them, and listen to them when they attempt to speak. They who applaud children for knowing the names of things, induce them quickly to learn a number of names by rote; as long as they learn the names of external objects only, which they can see, and smell, and touch, all is well; the names will convey distinct ideas of certain perceptions. A child who learns the name of a taste, or of a colour, who learns that the taste of sugar is called sweet, and that the colour of a red rose is called red, has learned distinct words to express certain perceptions: and we can at any future time recall to his mind the memory of those perceptions by means of their names, and he understands us as well as the most learned philosopher. But, suppose that a boy had learned only the name of gold; that when different metals were shown to him, he could put his finger upon gold, and say, "That is gold;" yet this boy does not know all the properties

of gold; he does not know in what it differs from other metals; to what uses it is applied in arts, manufactures, and commerce; the name of gold, in his mind, represents nothing more than a substance of a bright yellow colour, upon which people, he does not precisely know why, set a great value. Now, it is very possible, that a child might, on the contrary, learn all the properties, and the various uses of gold, without having learned its name; his ideas of this metal would be perfectly distinct; but whenever he wished to speak of gold, he would be obliged to use a vast deal of circumlocution to make himself understood; and if he were to enumerate all the properties of the metal every time he wanted to recal the general idea, his conversation would be intolerably tedious to others, and to himself this useless repetition must be extremely laborious. He would certainly be glad to learn that single word *gold*, which would save him so much trouble; his understanding would appear suddenly to have improved, simply from his having acquired a proper sign to represent his ideas. The boy who had learnt the name, without knowing any of the properties of gold, would also appear comparatively ignorant, as soon as it is discovered that he has few ideas annexed to the word. It is, perhaps, for this reason, that some children seem suddenly to shine out with knowledge, which no one suspected they possessed; whilst others, who had appeared to be very quick and clever, come to a dead stop in their education, and appear to be blighted by some unknown cause. The children who suddenly shine out, are those who had acquired a number of ideas, and

who, the moment they acquire proper words, can communicate their thoughts to others. Those children who suddenly seem to lose their superiority, are those who had acquired a variety of words, but who had not annexed ideas to them. When their ignorance is detected, we not only despair of them, but they are apt to despair of themselves; they see their companions get before them, and they do not exactly perceive the cause of their sudden incapacity. Where we speak of sensible, visible, tangible objects, we can easily detect and remedy a child's ignorance. It is easy to discover whether he has or has not a complete notion of such a substance as gold; we can enumerate its properties, and readily point out in what his definition is defective. The substance can be easily produced for examination; most of its properties are obvious to the senses; we have nothing to do but to show them to the child, and to associate with each property its usual name; here there can be no danger of puzzling his understanding; but when we come to the explanation of words which do not represent external objects, we shall find the affair more difficult. We can make children understand the meaning of those words which are the names of simple feelings of the mind, such as surprise, joy, grief, pity; because we can either put our pupils in situations where they actually feel these sensations, and then we may associate the name with the feelings; or we may, by the example of other people, who actually suffer pain or enjoy pleasure, point out what we mean by the words joy and grief. But how shall we explain to our young pupils, a number of words

which represent neither existing substances nor simple feelings, when we can neither recur to experiment nor to sympathy for assistance? How shall we explain, for instance, the words virtue, justice, benevolence, beauty, taste, &c.? To analyze our own ideas of these, is no easy task; to explain the process to a young child, is scarcely possible. Call upon any man, who has read and reflected, for a definition of virtue, the whole "theory of moral sentiments" rises, perhaps, to his view at once, in all its elegance; the paradoxical acumen of Mandeville, the perspicuous reasoning of Hume, the accurate metaphysics of Condillac, the persuasive eloquence of Stewart; all the various doctrines that have been supported concerning the foundation of morals, such as the fitness of things, the moral sense, the beauty of truth, utility, sympathy, common sense; all that has been said by ancient and modern philosophers, is recalled in transient perplexing succession to his memory. If such be the state of mind of the man who is to define, what must be the condition of the child who is to understand the definition? All that a prudent person will attempt, is to give instances of different virtues; but even these, it will be difficult properly to select for a child. General terms, whether in morals or in natural philosophy, should, we apprehend, be as much as possible avoided in early education. Some people may imagine that children have improved in virtue and wisdom, when they can talk fluently of justice, and charity, and humanity; when they can read with a good emphasis any didactic compositions in verse or prose. But let any person of sober, common sense,

be allowed to cross-examine these proficient, and the pretended extent of their knowledge will shrink into a narrow compass; nor will their virtues, which have never seen service, be ready for action.

General terms are, as it were, but the indorsements upon the bundles of our ideas; they are useful to those who have collected a number of ideas, but utterly useless to those who have no collections ready for classification: nor should we be in a hurry to tie up the bundles, till we are sure that the collection is tolerably complete; the trouble, the difficulty, the shame of untying them late in life, is felt even by superior minds. "Sir," said Dr. Johnson, "I don't like to have any of my opinions attacked. I have made up my faggot, and if you draw out one you weaken the whole bundle."

Preceptors sometimes explain general terms and abstract notions vaguely to their pupils, simply because they are ashamed to make that answer which every sensible person must frequently make to a child's inquiries, "I don't know."¹² Surely it is much better to say at once, "I cannot explain this to you," than to attempt an imperfect or sophistical reply. Fortunately for us, children, if they are not forced to attend to studies for which they have no taste, will not trouble us much with moral and metaphysical questions; their attention will be fully employed upon external objects; intent upon experiments, they will not be very inquisitive about theories. Let us then take care that

¹² Rousseau.

their simple ideas be accurate, and when these are compounded, their complex notions, their principles, opinions, and tastes, will necessarily be just; their language will then be as accurate as their ideas are distinct; and hence they will be enabled to reason with precision, and to invent with facility. We may observe, that the great difficulty in reasoning is to fix steadily upon our terms; ideas can be readily compared, when the words by which we express them are defined; as in arithmetic and algebra, we can easily solve any problem, when we have precise signs for all the numbers and quantities which are to be considered.

It is not from idleness, it is not from stupidity, it is not from obstinacy, that children frequently show an indisposition to listen to those who attempt to explain things to them. The exertion of attention, which is frequently required from them, is too great for the patience of childhood: the words that are used are so inaccurate in their signification, that they convey to the mind sometimes one idea and sometimes another; we might as well require of them to cast up a sum right whilst we rubbed out and changed the figures every instant, as expect that they should seize a combination of ideas presented to them in variable words. Whoever expects to command the attention of an intelligent child, must be extremely careful in the use of words. If the pupil be paid for the labour of listening by the pleasure of understanding what is said, he will attend, whether it be to his playfellow, or to his tutor, to conversation, or to books. But if he has by fatal experience discovered, that, let him listen

ever so intently, he cannot understand, he will spare himself the trouble of fruitless exertion; and, though he may put on a face of attention, his thoughts will wander far from his tutor and his tasks.

"It is impossible to fix the attention of children," exclaims the tutor; "when this boy attends he can do any thing, but he will not attend for a single instant."

Alas! it is in vain to say he *will not* attend; he *cannot*.

CHAPTER III ON ATTENTION

Pere Bourgeois, one of the missionaries to China, attempted to preach a Chinese sermon to the Chinese. His own account of the business is the best we can give.

"They told me *Chou* signifies a book, so that I thought whenever the word *Chou* was pronounced, a book was the subject of discourse; not at all. Chou, the next time I heard it, I found signified *a tree*. Now I was to recollect Chou was a book, and a tree; but this amounted to nothing. Chou I found also expressed *great heats*. Chou is *to relate*. Chou is *the Aurora*. Chou means *to be accustomed*. Chou expresses the *loss of a wager*, &c. I should never have done were I to enumerate all its meanings*****.

"I recited my sermon at least fifty times to my servant before I spoke it in public; and yet I am told, though he continually corrected me, that of the ten parts of the sermon (as the Chinese express themselves) they hardly understood three. Fortunately the Chinese are wonderfully patient."

Children are sometimes in the condition in which the Chinese found themselves at this learned missionary's sermon, and their patience deserves to be equally commended. The difficulty of understanding the Chinese Chou, strikes us immediately, and we sympathise with Pere Bourgeois's perplexity; yet, many words,

which are in common use amongst us, may perhaps be as puzzling to children. *Block* (see Johnson's Dictionary) signifies *a heavy piece of timber, a mass of matter*. Block means *the wood on which hats are formed*. Block means *the wood on which criminals are beheaded*. Block is *a sea-term for pulley*. Block is *an obstruction, a stop*; and, finally, Block means *a blockhead*.

There are in our language, ten meanings for *sweet*, ten for *open*, twenty-two for *upon*, and sixty-three for *to fall*. Such are the defects of language! But, whatever they may be, we cannot hope immediately to see them reformed, because common consent, and universal custom, must combine to establish a new vocabulary. None but philosophers could invent, and none but philosophers would adopt, a philosophical language. The new philosophical language of chemistry was received at first with some reluctance, even by chemists, notwithstanding its obvious utility and elegance. Butter of antimony, and liver of sulphur, flowers of zinc, oil of vitriol, and spirit of sulphur by the bell, powder of algaroth, and salt of alembroth, may yet long retain their ancient titles amongst apothecaries. There does not exist in the mineral kingdom either butter or oil, or yet flowers; these treacherous names¹³ are given to the most violent poisons, so that there is no analogy to guide the understanding or the memory: but Custom has a prescriptive right to talk nonsense. The barbarous enigmatical jargon of the ancient adepts continued for above a century to be the only chemical

¹³ V. Preface to Berthollet's Chemical Nomenclature.

language of men of science, notwithstanding the prodigious labour to the memory, and confusion to the understanding, which it occasioned: they have but just now left off calling one of their vessels for distilling, a death's head, and another a helmet. Capricious analogy with difficulty yields to rational arrangement. If such has been the slow progress of a philosophical language amongst the learned, how can we expect to make a general, or even a partial reformation amongst the ignorant? And it may be asked, how can we in education attempt to teach in any but customary terms? There is no occasion to make any sudden or violent alteration in language; but a man who attempts to teach, will find it necessary to select his terms with care, to define them with accuracy, and to abide by them with steadiness; thus he will make a philosophical vocabulary for himself. Persons who want to puzzle and to deceive, always pursue a contrary practice; they use as great a variety of unmeaning, or of ambiguous words, as they possibly can.¹⁴ That state juggler, Oliver Cromwell, excelled in this species of eloquence; his speeches are models in their kind. Count Cagliostro, and the Countess de la Motte, were not his superiors in the power of baffling the understanding. The ancient oracles, and the old books of judicial astrologers, and of alchemists, were contrived upon the same principles; in all these we are confounded by a multiplicity of words which convey a doubtful sense.

Children, who have not the habit of listening to words without

¹⁴ V. Condillac's "Art de Penser."

understanding them, yawn and writhe with manifest symptoms of disgust, whenever they are compelled to hear sounds which convey no ideas to their minds. All supernumerary words should be avoided in cultivating the power of attention.

The common observation, that we can attend to but one thing at a time, should never be forgotten by those who expect to succeed in the art of teaching. In teaching new terms, or new ideas, we must not produce a number at once. It is prudent to consider, that the actual progress made in our business at one sitting is not of so much consequence, as the desire left in the pupil's mind to sit again. Now a child will be better pleased with himself, and with his tutor, if he acquire one distinct idea from a lesson, than if he retained a confused notion of twenty different things. Some people imagine, that as children appear averse to repetition, variety will amuse them. Variety, to a certain degree, certainly relieves the mind; but then the objects which are varied must not all be entirely new. Novelty and variety, joined, fatigue the mind. Either we remain passive at the show, or else we fatigue ourselves with ineffectual activity.

A few years ago, a gentleman¹⁵ brought two Eskimaux to London – he wished to amuse, and at the same time to astonish, them with the great magnificence of the metropolis. For this purpose, after having equipped them like English gentlemen, he took them out one morning to walk through the streets of London. They walked for several hours in silence; they

¹⁵ Major Cartwright. See his Journal, &c.

expressed neither pleasure nor admiration at any thing which they saw. When their walk was ended, they appeared uncommonly melancholy and stupified. As soon as they got home, they sat down with their elbows upon their knees, and hid their faces between their hands. The only words they could be brought to utter, were, "Too much smoke – too much noise – too much houses – too much men – too much every thing!"

Some people who attend public lectures upon natural philosophy, with the expectation of being much amused and instructed, go home with sensations similar to those of the poor Eskimaux; they feel that they have had too much of every thing. The lecturer has not time to explain his terms, or to repeat them till they are distinct in the memory of his audience.¹⁶ To children, every mode of instruction must be hurtful which fatigues attention; therefore, a skilful preceptor will, as much as possible, avoid the manner of teaching, to which the public lecturer is in some degree compelled by his situation. A private preceptor, who undertakes the instruction of several pupils in the same family, will examine with care the different habits and tempers of his pupils; and he will have full leisure to adapt his instructions peculiarly to each.

There are some general observations which apply to all understandings; these we shall first enumerate, and we may afterwards examine what distinctions should be made for pupils of different tempers or dispositions.

¹⁶ V. Chapter on Mechanics.

Besides distinctness and accuracy in the language which we use, besides care to produce but few ideas or terms that are new in our first lessons, we must exercise attention only during very short periods. In the beginning of every science pupils have much laborious work; we should therefore allow them time; we should repress our own impatience when they appear to be slow in comprehending reasons, or in seizing analogies. We often expect, that those whom we are teaching should know some things intuitively, because these may have been so long known to us that we forget how we learned them. We may from habit learn to pass with extraordinary velocity from one idea to another. "Some often repeated processes of reasoning or invention," says Mr. Stewart, "may be carried on so quickly in the mind, that we may not be conscious of them ourselves." Yet we easily convince ourselves that this rapid facility of thought is purely the result of practice, by observing the comparatively slow progress of our understandings in subjects to which we have not been accustomed: the progress of the mind is there so slow, that we can count every step.

We are disposed to think that those must be naturally slow and stupid, who do not perceive the resemblances between objects which strike us, we say, at the first glance. But what we call the first glance is frequently the fiftieth: we have got the things completely by heart; all the parts are known to us, and we are at leisure to compare and judge. A reasonable preceptor will not expect from his pupils two efforts of attention at the same instant;

he will not require them at once to learn terms by heart, and to compare the objects which those terms represent; he will repeat his terms till they are thoroughly fixed in the memory; he will repeat his reasoning till the chain of ideas is completely formed.

Repetition makes all operations easy; even the fatigue of thinking diminishes by habit. That we may not increase the labour of the mind unseasonably, we should watch for the moment when habit has made one lesson easy, and when we may go forward a new step. In teaching the children at the House of Industry at Munich to spin, Count Rumford wisely ordered that they should be made perfect in one motion before any other was shown to them: at first they were allowed only to move the wheel by the treadle with their feet; when, after sufficient practice, the foot became perfect in its lesson, the hands were set to work, and the children were allowed to begin to spin with coarse materials. It is said that these children made remarkable good spinners. Madame de Genlis applied the same principle in teaching Adela to play upon the harp.¹⁷

In the first attempts to learn any new bodily exercise, as fencing or dancing, persons are not certain what muscles they must use, and what may be left at rest; they generally employ those of which they have the most ready command, but these may not always be the muscles which are really wanted in the new operation. The simplest thing appears difficult, till, by practice, we have associated the various slight motions which ought to

¹⁷ V. Adela and Theodore.

be combined. We feel, that from want of use, our motions are not obedient to our will, and to supply this defect, we exert more strength and activity than is requisite. "It does not require strength; you need not use so much force; you need not take so much pains;" we frequently say to those who are making the first painful awkward attempts at some simple operation. Can any thing appear more easy than knitting, when we look at the dexterous, rapid motions of an experienced practitioner? But let a gentleman take up a lady's knitting needles, and knitting appears to him, and to all the spectators, one of the most difficult and laborious operations imaginable. A lady who is learning to work with a tambour needle, puts her head down close to the tambour frame, the colour comes into her face, she strains her eyes, all her faculties are exerted, and perhaps she works at the rate of three links a minute. A week afterwards, probably, practice has made the work perfectly easy; the same lady goes rapidly on with her work; she can talk and laugh, and perhaps even think, whilst she works. She has now discovered that a number of the motions, and a great portion of that attention which she thought necessary to this mighty operation, may be advantageously spared.

In a similar manner, in the exercise of our minds upon subjects that are new to us, we generally exert more attention than is necessary or serviceable, and we consequently soon fatigue ourselves without any advantage. Children, to whom many subjects are new, are often fatigued by these overstrained and misplaced efforts. In these circumstances, a tutor should relieve

the attention by introducing indifferent subjects of conversation; he can, by showing no anxiety himself, either in his manner or countenance, relieve his pupil from any apprehension of his displeasure, or of his contempt; he can represent that the object before them is not a matter of life and death; that if the child does not succeed in the first trials, he will not be disgraced in the opinion of any of his friends; that by perseverance he will certainly conquer the difficulty; that it is of little consequence whether he understands the thing in question to-day or to-morrow; these considerations will calm the over-anxious pupil's agitation, and, whether he succeed or not, he will not suffer such a degree of pain as to disgust him in his first attempts.

Besides the command which we, by this prudent management, obtain over the pupil's mind, we shall also prevent him from acquiring any of those awkward gestures and involuntary motions which are sometimes practised to relieve the pain of attention.

Dr. Darwin observes, that when we experience any disagreeable sensations, we endeavour to procure ourselves temporary relief by motions of those muscles and limbs which are most habitually obedient to our will. This observation extends to mental as well as to bodily pain; thus persons in violent grief wring their hands and convulse their countenances; those who are subject to the petty, but acute miseries of false shame, endeavour to relieve themselves by awkward gestures and continual motions. A plough-boy, when he is brought into

the presence of those whom he thinks his superiors, endeavours to relieve himself from the uneasy sensations of false shame, by twirling his hat upon his fingers, and by various uncouth gestures. Men who think a great deal, sometimes acquire habitual awkward gestures, to relieve the pain of intense thought.

When attention first becomes irksome to children, they mitigate the mental pain by wrinkling their brows, or they fidget and put themselves into strange attitudes. These odd motions, which at first are voluntary, after they have been frequently associated with certain states of mind, constantly recur involuntarily with those feelings or ideas with which they have been connected. For instance, a boy, who has been used to buckle and unbuckle his shoe, when he repeats his lesson by rote, cannot repeat his lesson without performing this operation; it becomes a sort of artificial memory, which is necessary to prompt his recollective faculty. When children have a *variety* of tricks of this sort, they are of little consequence; but when they have acquired a few constant and habitual motions, whilst they think, or repeat, or listen, these should be attended to, and the habits should be broken, otherwise these young people will appear, when they grow up, awkward and ridiculous in their manners; and, what is worse, perhaps their thoughts and abilities will be too much in the power of external circumstances. Addison represents, with much humour, the case of a poor man who had the habit of twirling a bit of thread round his finger; the thread was accidentally broken, and the orator stood mute.

We once saw a gentleman get up to speak in a public assembly, provided with a paper of notes written in pencil: during the exordium of his speech, he thumbed his notes with incessant agitation; when he looked at the paper, he found that the words were totally obliterated; he was obliged to apologize to his audience; and, after much hesitation, sat down abashed. A father would be sorry to see his son in such a predicament.

To prevent children from acquiring such awkward tricks whilst they are thinking, we should in the first place take care not to make them attend for too long a time together, then the pain of attention will not be so violent as to compel them to use these strange modes of relief. Bodily exercise should immediately follow that entire state of rest, in which our pupils ought to keep themselves whilst they attend. The first symptoms of any awkward trick should be watched; they are easily prevented by early care from becoming habitual. If any such tricks have been acquired, and if the pupil cannot exert his attention in common, unless certain contortions are permitted, we should attempt the cure either by sudden slight bodily pain, or by a total suspension of all the employments with which these bad habits are associated. If a boy could not read without swinging his head like a pendulum, we should rather prohibit him from reading for some time, than suffer him to grow up with this ridiculous habit. But in conversation, whenever opportunities occur of telling him any thing in which he is particularly interested, we should refuse to gratify his curiosity, unless he keeps himself perfectly still.

The excitement here would be sufficient to conquer the habit.

Whatever is connected with pain or pleasure commands our attention; but to make this general observation useful in education, we must examine what degrees of stimulus are necessary for different pupils, and in different circumstances. We have formerly observed,¹⁸ that it is not prudent early to use violent or continual stimulus, either of a painful or a pleasurable nature, to excite children to application, because we should by an intemperate use of these, weaken the mind, and because we may with a little patience obtain all we wish without these expedients. Besides these reasons, there is another potent argument against using violent motives to excite attention; such motives frequently disturb and dissipate the very attention which they attempt to fix. If a child be threatened with severe punishment, or flattered with the promise of some delicious reward, in order to induce his performance of any particular task, he desires instantly to perform the task; but this desire will not ensure his success: unless he has previously acquired the habit of voluntary exertion, he will not be able to turn his mind from his ardent wishes, even to the means of accomplishing them. He will be in the situation of Alnaschar in the Arabian tales, who, whilst he dreamt of his future grandeur, forgot his immediate business. The greater his hope or fear, the greater the difficulty of his employing himself.

To teach any new habit or art, we must not employ any alarming excitements: small, certain, regularly recurring motives,

¹⁸ Chapter on Tasks.

which interest, but which do not distract the mind, are evidently the best. The ancient inhabitants of Minorca were said to be the best slingers in the world; when they were children, every morning what they were to eat was slightly suspended from high poles, and they were obliged to throw down their breakfasts with their slings from the places where they were suspended, before they could satisfy their hunger. The motive seems to have been here well proportioned to the effect that was required; it could not be any great misfortune to a boy to go without his breakfast; but as this motive returned every morning, it became sufficiently serious to the hungry slingers.

It is impossible to explain this subject so as to be of use, without descending to minute particulars. When a mother says to her little daughter, as she places on the table before her a bunch of ripe cherries, "Tell me, my dear, how many cherries are there, and I will give them to you?" The child's attention is fixed instantly; there is a sufficient motive, not a motive which excites any violent passions, but which raises just such a degree of hope as is necessary to produce attention. The little girl, if she knows from experience that her mother's promise will be kept, and that her own patience is likely to succeed, counts the cherries carefully, has her reward, and upon the next similar trial she will, from this success, be still more disposed to exert her attention. The pleasure of eating cherries, associated with the pleasure of success, will balance the pain of a few moments prolonged application, and by degrees the cherries may be withdrawn, the

association of pleasure will remain. Objects or thoughts, that have been associated with pleasure, retain the power of pleasing; as the needle touched by the loadstone acquires polarity, and retains it long after the loadstone is withdrawn.

Whenever attention is habitually raised by the power of association, we should be careful to withdraw all the excitements that were originally used, because these are now unnecessary; and, as we have formerly observed, the steady rule, with respect to stimulus, should be to give the least possible quantity that will produce the effect we want. Success is a great pleasure; as soon as children become sensible to this pleasure, that is to say, when they have tasted it two or three times, they will exert their attention merely with the hope of succeeding. We have seen a little boy of three years old, frowning with attention for several minutes together, whilst he was trying to clasp and unclasp a lady's bracelet; his whole soul was intent upon the business; he neither saw nor heard any thing else that passed in the room, though several people were talking, and some happened to be looking at him. The pleasure of success, when he clasped the bracelet, was quite sufficient; he looked for no praise, though he was perhaps pleased with the sympathy that was shown in his success. Sympathy is a better reward for young children in such circumstances than praise, because it does not excite vanity, and it is connected with benevolent feelings; besides, it is not so violent a stimulus as applause.

Instead of increasing excitements to produce attention, we

may vary them, which will have just the same effect. When sympathy fails, try curiosity; when curiosity fails, try praise; when praise begins to lose its effect, try blame; and when you go back again to sympathy, you will find that, after this interval, it will have recovered all its original power. Doctor Darwin, who has the happy art of illustrating, from the most familiar circumstances in real life, the abstract theories of philosophy, gives us the following picturesque instance of the use of varying motives to prolong exertion.

"A little boy, who was tired of walking, begged of his papa to carry him. "Here," says the reverend doctor, "ride upon my gold headed cane;" and the pleased child, putting it between his legs, galloped away with delight. Here the aid of another sensorial power, that of pleasurable sensation, superadded power to exhausted volition, which could otherwise only have been excited by additional pain, as by the lash of slavery."¹⁹

Alexander the Great one day saw a poor man carrying upon his shoulders a heavy load of silver for the royal camp: the man tottered under his burden, and was ready to give up the point from fatigue. "Hold on, friend, the rest of the way, and carry it to your own tent, for it is yours," said Alexander.

There are some people, who have the power of exciting others to great mental exertions, not by the promise of specific rewards, or by the threats of any punishment, but by the ardent ambition which they inspire, by the high value which is set upon their

¹⁹ Zoonomia, vol. i. page 435.

love and esteem. When we have formed a high opinion of a friend, his approbation becomes necessary to our own self-complacency, and we think no labour too great to satisfy our attachment. Our exertions are not fatiguing, because they are associated with all the pleasurable sensations of affection, self-complacency, benevolence, and liberty. These feelings, in youth, produce all the virtuous enthusiasm characteristic of great minds; even childhood is capable of it in some degree, as those parents well know, who have never enjoyed the attachment of a grateful affectionate child. Those, who neglect to cultivate the affections of their pupils, will never be able to excite them to "noble ends," by "noble means." Theirs will be the dominion of fear, from which reason will emancipate herself, and from which pride will yet more certainly revolt.

If Henry the Fourth of France had been reduced, like Dionysius the tyrant of Syracuse, to earn his bread as a schoolmaster, what a different preceptor he would probably have made! Dionysius must have been hated by his scholars as much as by his subjects, for it is said, that "he²⁰ practised upon children that tyranny which he could no longer exercise over men."

The ambassador, who found Henry the Fourth playing upon the carpet with his children, would probably have trusted his own children, if he had any, to the care of such an affectionate tutor.

Henry the Fourth would have attached his pupils whilst he instructed them; they would have exerted themselves because

²⁰ Cicero.

they could not have been happy without his esteem. Henry's courtiers, or rather his friends, for though he was a king he had friends, sometimes expressed surprise at their own disinterestedness: "This king pays us with words," said they, "and yet we are satisfied!" Sully, when he was only Baron de Rosny, and before he had any hopes of being a duke, was once in a passion with the king his master, and half resolved to leave him: "But I don't know how it was," says the honest minister, "with all his faults, there is something about Henry which I found I could not leave; and when I met him again, a few words made me forget all my causes of discontent."

Children are more easily attached than courtiers, and full as easily rewarded. When once this generous desire of affection and esteem is raised in the mind, their exertions seem to be universal and spontaneous: children are then no longer like machines, which require to be wound up regularly to perform certain revolutions; they are animated with a living principle, which directs all that it inspires.

We have endeavoured to point out the general excitements, and the general precautions, to be used in cultivating the power of attention; it may be expected, that we should more particularly apply these to the characters of different pupils. We shall not here examine whether there be any original difference of character or intellect, because this would lead into a wide theoretical discussion; a difference in the temper and talents of children early appears, and some practical remarks may be of service

to correct defects, or to improve abilities, whether we suppose them to be natural or acquired. The first differences which a preceptor observes between his pupils, when he begins to teach them, are perhaps scarcely marked so strongly as to strike the careless spectator; but in a few years these varieties are apparent to every eye. This seems to prove, that during the interval the power of education has operated strongly to increase the original propensities. The quick and slow, the timid and presumptuous, should be early instructed so as to correct as much as possible their several defects.

The manner in which children are first instructed must tend either to increase or diminish their timidity, or their confidence in themselves, to encourage them to undertake great things, or to rest content with limited acquirements. Young people, who have found from experience, that they cannot remember or understand one half of what is forced upon their attention, become extremely diffident of their own capacity, and they will not undertake as much even as they are able to perform. With timid tempers, we should therefore begin, by expecting but little from each effort, but whatever is attempted, should be certainly within their attainment; success will encourage the most stupid humility. It should be carefully pointed out to diffident children, that attentive patience can do as much as quickness of intellect. If they perceive that time makes all the difference between the quick and the slow, they will be induced to persevere. The transition of attention from one subject to another is difficult to some

children, to others it is easy. If all be expected to do the same things in an equal period of time, the slow will absolutely give up the competition; but, on the contrary, if they are allowed time, they will accomplish their purposes. We have been confirmed in our belief of this doctrine by experiments. The same problems have been frequently given to children of different degrees of quickness, and though some succeeded much more quickly than others, all the individuals in the family have persevered till they have solved the questions; and the timid seem to have been more encouraged by this practical demonstration of the infallibility of persevering attention, than by any other methods which have been tried. When, after a number of small successful trials, they have acquired some share of confidence in themselves, when they are certain of the possibility of their performing any given operations, we may then press them a little as to velocity. When they are well acquainted with any set of ideas, we may urge them to quick transition of attention from one to another; but if we insist upon this rapidity of transition, before they are thoroughly acquainted with each idea in the assemblage, we shall only increase their timidity and hesitation; we shall confound their understandings, and depress their ambition.

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