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# A PRACTICAL ENQUIRY INTO THE PHILOSOPHY OF EDUCATION.

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**BY JAMES GALL,**

**INVENTOR OF THE TRIANGULAR ALPHABET FOR THE BLIND; AND AUTHOR OF THE "END AND ESSENCE OF SABBATH SCHOOL TEACHING," &c.**

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"*The Works of the Lord are great, sought out of all them that have pleasure therein.*"—PSAL. cxi. 2.

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# PREFACE.

The Author of the following pages is a plain man, who has endeavoured to write a plain book, for the purpose of being popularly useful. The philosophical form which his enquiries have assumed, is the result rather of accidental circumstances than of free choice. The strong desire which he felt in his earlier years to benefit the Young, induced him to push forward in the paths which appeared to him most likely to lead to his object; and it was not till he had advanced far into the fields of philosophy, that he first began dimly to perceive the importance of the ground which he had unwittingly occupied. The truth is, that he had laboured many years in the Sabbath Schools with which he had connected himself, before he was aware that, in his combat with ignorance, he was wielding weapons that were comparatively new; and it was still longer, before he very clearly understood the principles of those Exercises which he found so successful. One investigation led to another; light shone out as he proceeded; and he now submits, with full confidence in the truth of his general principles and deductions, the results of more than thirty years' experience and reflection in the great cause of Education.

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He has only further to observe, that the term "NATURE," which occurs so frequently, has been adopted as a convenient and popular mode of expression. None of his readers needs to be informed, that this is but another manner of designating "THE GOD OF NATURE," whose laws, as established in the young mind, he has been endeavouring humbly, and perseveringly to imitate.

*Myrtle Bank, Trinity, Edinburgh,*
*8th May, 1840.*

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# PART I.

# ON THE PRELIMINARY OBJECTS NECESSARY FOR THE ESTABLISHMENT AND IMPROVEMENT OF EDUCATION.

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## CHAP. I.

### *On the Importance of establishing the Science of Education on a solid Foundation.*

Education is at present obviously in a transition state. The public mind has of late become alive to the importance of the subject; and all persons are beginning to feel awake to the truth, that something is yet wanting to insure efficiency and permanence to the labours of the teacher. The public will not be satisfied till some decided change has taken place; and many are endeavouring to grope their way to something better. It is with an earnest desire to help forward this great movement, that the writer of the following pages has been induced to publish the result of much study, and upwards of thirty years' experience, in the hope that it may afford at least some assistance in directing the enquiries of those who are prosecuting the same object.

On entering upon this investigation, it will be of use to keep in mind, that all the sciences have, at particular periods of their history, been in the same uncertain and unsettled position, as that which Education at present occupies; and that each of them has in its turn, had to pass through an ordeal, similar to that which education is about to undergo. They have triumphantly [Pg 14] succeeded; and their subsequent rapid advancement is the best proof that they are now placed on a solid and permanent foundation. It is of importance, therefore, in attempting to forward the science of education, that we should profit by the experience of those who have gone before us. They succeeded by a strict observation of facts, and a stern rejection of every species of mere supposition and opinion;—by an uncompromising hostility to prejudice and selfishness, and a fearless admission of truth wherever it was discovered. Such must be the conduct of the Educationist, if he expects to succeed in an equal degree. The history of astronomy as taught by astrologers, and of chemistry in the hands of the alchymist, should teach both the lovers and the fearers of change an important lesson. These pretended sciences being mere conjectures, were of use to nobody; and yet the boldness with which they were promulgated, and the confidence with which they were received, had the effect of suppressing enquiry, and shutting out the truth for several generations. Similar may be the effects of errors in education, and similar the danger of too easily admitting them. The adoption of plausible theories, or of erroneous principles, must lead into innumerable difficulties; and should they be hastily patronized, and authoritatively promulgated, the improvement of this first and most important of the sciences may be retarded for a century to come.

The other sciences, during the last half century, have advanced with amazing rapidity. This has been the result of a strict adherence to well established facts, and their legitimate inferences.—A docile subjection of the mind to the results of experiment, and a candid confession and abandonment of fallacies, have characterized every benefactor of the sciences;—and the science of education must be advanced by an adherence to the same principles. The Educationist must be willing to abandon error, as well as to receive truth; and must resolutely shake off all conjecture [Pg 15] and opinions not founded on fair and appropriate experiment. This course may appear tedious;—but it is the shortest and the best. By this mode of induction, all the facts which he is able to glean will assuredly be found to harmonize with nature, with reason, and with Scripture; and with these for his supporters, the Reformer in education has nothing to fear. His progress may be slow, but it will be sure; for every principle which he thus discovers, will enable him, not only to outrun his neighbours, but to confer a permanent and valuable boon upon posterity.

That any rational and accountable being should ever have been found to oppose the progress of truth, is truly humiliating; yet every page of history, which records the developement of new principles, exhibits also the outbreakings of prejudice and selfishness. The deductions of Galileo, of Newton, of Harvey, and innumerable others, have been opposed and denounced, each in its turn; while their promoters have been vilified as empyrics or innovators. Nor has this been done by those only whose self love or worldly interests prompted them to exclude the truth, but by good and honourable men, whose prejudices were strong, and whose zeal was not guided by discretion. Such persons have frequently been found to shut their eyes against the plainest truths, to wrestle with their own convictions, and positively refuse even to listen to evidence. The

same thing may happen with regard to education;—and this is no pleasing prospect to the lover of peace, who sets himself forward as a reformer in this noble work.—Change is inevitable. Teaching is an art; and it must, like all the other arts, depend for its improvement upon the investigations of science. Now, every one knows, that although the cultivation of chemistry, and other branches of natural science, has, of late years, given an extraordinary stimulus to the arts, yet the science of education, from which the art of teaching can alone derive its power, is one, [Pg 16] beyond the threshold of which modern philosophy has scarcely entered. Changes, therefore, both in the theory and practice of teaching, may be anticipated;—and that these changes will be inconvenient and annoying to many, there can be no doubt. That individuals, in these circumstances, should be inclined to deprecate and oppose these innovations and improvements, is nothing more than might be expected; but that the improvements themselves should on that account be either postponed or abandoned, would be highly injurious. An enlightened system of education is peculiarly the property of the public, on which both personal, family, and national happiness in a great measure depends. These interests therefore must not be sacrificed to the wishes or the convenience of private individuals. The prosperity and happiness of mankind are at stake; and the welfare of succeeding generations will, in no small degree, be influenced by the establishment of sound principles in education at the present time. Nothing, therefore, should be allowed to mystify or cripple that science, upon which the spread and the permanence of all useful knowledge mainly rest.

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## CHAP. II.

### *On the Cultivation of Education as a Science.*

From numerous considerations, it must be evident, that education claims the first rank among the sciences; and, in that case, the art of Teaching ought to take precedence among the arts;—not perhaps in respect of its difficulties, but most certainly in respect of its importance.

The success of the teacher in his labours, will depend almost entirely on the extent and the accuracy of the investigations of the philosopher. The science must guide the art. Experience shews, that where an artist in ordinary life is not directed by science,—by acknowledged [Pg 17] principles,—he can never make any steady improvement. In like manner, when the principles of education are unknown, no advancement in the art can be expected from the teacher. Every attempt at change in such circumstances must be unsatisfactory; and even when improvements are by chance accomplished, they are but partial, and must be stationary.—When, on the contrary, the teacher is directed by ascertained principles, he never can deviate far from the path of success; and even if he should, he has the means in his own power of ascertaining the cause of his failure, and of retracing his steps. He can, therefore, at his pleasure, add to or abridge, vary or transpose his exercises with his pupils, provided only that the great principles of the science be kept steadily in view, and be neither outraged, nor greatly infringed. No teacher, therefore, should profess the art, without making himself familiar with the philosophical principles upon which it is founded. In the mechanical arts, this practice is now generally followed, and with the happiest effects. The men of the present generation have profited by the painful experience of thousands in former times; who, trusting to mere conjectures, tried, failed, and ruined themselves. The mechanics of our day, instead of indulging in blind theories of their own, and hazarding their money and their time upon speculation and chance, are willing to borrow light for their guidance from those who have provided it. They slowly, but surely, follow in the path opened up to them by the discoveries of science,—and they are never disappointed.

The unexampled success of the mechanical arts, would, upon the above principles, naturally lead us to conclude, that the sciences, from which they have derived all that they possess, must have been cultivated with corresponding energy. And such is the fact. Since the adoption of the inductive method of philosophizing, nearly all the sciences have been advancing rapidly and [Pg 18] steadily; and the cause of this is to be found in adhering to the rules of induction. No science has been allowed to rest its claims upon mere theory, or authority of any kind, but upon evidence derived from facts. Mere opinions and suppositions have been rigidly excluded; and that alone which was acquired by accurate investigation, has been acknowledged in science as having the stamp of truth. The inductive philosophy takes nothing for granted. Every conclusion must be legitimately drawn from ascertained facts, or from principles established by experiment; and the consequence has been, not only that what has been attained is permanent, and will benefit all future generations, but the amount of that attainment, in the short time that has already elapsed, is actually greater than all that had been previously gained during centuries. In this general improvement, however, the science of Education has till lately formed an exception. The principles of true philosophy do not appear to have been brought to bear upon it, as they have upon the other sciences; and the consequences of this neglect have been lamentable. In every

branch of natural philosophy, there are great leading principles already established. But where were there any such principles established by the philosopher for the guidance of the teacher? By what, except their own experience, and conjectures, were teachers directed in the training of the young?—Thirty or forty years ago, what was called "education" in our ordinary week-day schools, was little more than a mechanical round of barren exercises. The excitement of religious persecution, which had been the means of disciplining the intellectual and moral powers of Scotsmen for several previous generations, had by that time gradually subsided, and had left education to do its own work, by the use of its own resources. But these were perfectly inadequate to the task. The exercises almost universally employed in the education of the young, [Pg 19] had neither been derived from science, nor from experience of their own inherent power; and they would, from the beginning, have been found perfectly inefficient, had they not been aided, as before noticed, by the stimulant of religious persecution.—The state of education, at the time we speak of, is still fresh on the memory of living witnesses who were its victims; and some of the absurdities which were then universal, are not even yet altogether extinct.

Soon after the period above stated, an important change began to take place in the art of teaching,—but still unaided and undirected by science. Some of the more thinking and judicious of its professors, roused by the flagrant failures of their own practice, made several noble and exemplary efforts to place it on a better footing. Had these efforts been guided by scientific research, much more good would have been done than has been accomplished, and an immense amount of misdirected labour would have been saved. But although many of the attempts at a change failed, yet some of them succeeded, and have gradually produced ameliorations and improvements in the art of teaching. Still it must be observed, that philosophy has had little or no share in the merit. Her labours in this important field have yet to be begun. Valuable exercises have no doubt been introduced; but the principles upon which the success of these exercises depends, remain in a great measure concealed from the public generally:—And the reason of this is, that the public have been indebted for them to the *art* of the teacher, and not to the *science* of the philosopher.

That this is not the position in which matters of so much public importance should continue, we think no one will deny. Education must be cultivated as a science, before teaching can ever flourish as an art. The philosopher must first ascertain and light up the way, before the teacher can, with security, walk in it. Experiment must be employed to ascertain facts, investigate [Pg 20] causes, and trace these causes to their effects. By fair and legitimate deductions drawn from the facts thus ascertained, he will be enabled to establish certain principles, which, when acted upon by the teacher, will invariably succeed. But without this, the history of all the other arts and sciences teaches us, that success is not to be expected;—for although chance may sometimes lead the teacher to a happy device, there can be no steady progress. Even those beneficial exercises upon which he may have stumbled, become of little practical value; because, when the principles upon which they are based are unknown, they can neither be followed up with certainty, nor be varied without danger.

There will no doubt be a difficulty in the investigation of a science which is in itself so complicated, and which has hitherto been so little understood; but this is only an additional reason why it should be begun in a proper manner, and pursued with energy. The mode of procedure is the chief object of difficulty; but the experience and success of investigators in the other sciences, will be of great advantage in directing us in this. In the sciences of anatomy and physiology, for example, the investigations of the philosopher are designed to direct the several operations of the physician, the surgeon, and the dentist; in the same way as the investigations of the Educationist are intended to direct the operations of the Teacher. Now the mode of procedure in those sciences for such purposes is well known, and forms an excellent example for us in the present case. The duty of the anatomist, or physiologist, is simply to examine the operations of Nature in the animal economy, and the plans which she adopts for accomplishing her objects during health, and for throwing off impediments during disease. In conducting his investigations, the enquirer begins by taking a general view of the whole subject, and then separating and defining its leading parts. Pulsation, respiration, digestion, and the various [Pg 21] secretions and excretions of the body, are defined, and their general connection with each other correctly ascertained. These form his starting points; and then, taking each in its turn, he sets himself to discover the principles, or laws, which regulate its working in a healthy state;—what it is that promotes the circulation or stagnation of the blood, the bracing or relaxing of the nerves, the several processes in digestion, and the various functions of the skin and viscera. These are all first ascertained by observation and experience, and then, if necessary, established by experiment.

These principles, having thus been established by science, are available for direction in the arts. The physician acts under their guidance; and his object is simply to regulate his treatment and advice in accordance with them. In other words, *he endeavours to imitate Nature*, to remove the obstructions which he finds interfering with her operations, or to lend that aid which a knowledge of these principles points out as necessary. The surgeon and the dentist follow the same course, but more directly. In healing a wound, for example, the surgeon has to ascertain from science how Nature in similar cases proceeds when left to herself; and all his cuttings, and lancings, and dressings, are nothing more than *attempts to imitate her* in her healing operations. So well is this now understood, that every operation which does not at least recognise the principle is denounced—and justly denounced—as quackery; and the reason is, that uniform experience has convinced professional men, that they can only expect success when they follow with docility in the path which Nature has pointed out to them.

Precisely similar should be the plan of operation pursued by the Educationist. He should, in the first place, take a comprehensive view of the whole subject, and endeavour to map out to himself its great natural divisions;—in other words, he should endeavour to ascertain what are the things [Pg 22] which Nature teaches, that he may, by means of this great outline, form a general programme for the direction of the teacher. His next object ought to be, to ascertain the mode, and the means, adopted by Nature in forwarding these several departments of her educational process; the powers of mind engrossed in each; the order in which they are brought into exercise; and the combinations which she employs in perfecting them. In ascertaining these principles which regulate the operations of Nature in her educational processes, the same adherence to the rules prescribed by the inductive philosophy, which has crowned the other sciences with success, must be rigidly observed. There must be the same disregard of mere antiquity; there must be the same scrupulous sifting of evidence, and strict adherence to facts; there must be a discarding of all hypotheses, and a simple dependence upon ascertained truths alone. Adherence to these rules is as necessary in cultivating the science of education, as it has been in the other sciences; and the neglect of any one of them, may introduce an element of error, which may injure the labours of a whole lifetime.

We have some reason to fear, that although all this will be readily admitted in theory, it will be found somewhat difficult to adopt it in practice. The reason of this will be obvious when we reflect on the deep interest which the best and most philanthropic individuals in society take in this science. The other sciences are in some measure removed from the busy pursuits of life; they are the concern of certain persons, who are allowed to investigate and to experiment, to judge and to decide as they please, without the public in general caring much about the matter.—But education is a science of a different kind. Its value is acknowledged by every one, and its interests are dear to every benevolent heart. The individual who undertakes to examine, and more especially to promulgate, any new principle upon which education rests, will have a harder [Pg 23] task to perform, and a severer battle to fight, than the philosopher who attempts to overturn a false conclusion in chemistry, or an erroneous principle in mechanics. Among the learned community, not more than one in a thousand perhaps is personally interested either in mechanics or in chemistry; and few others will enter the lists to oppose that which appears legitimate and fair. The enemies and opponents of the chemical reformer in that case may be zealous and even fierce; but they are few, and he enjoys the sympathy and the countenance of the great majority of those whose countenance is worthy of his regard. But when we calculate the number of those who take an interest in the subject of education, and those who do not, the above numbers will be reversed. Nine hundred and ninety-nine among the educated public will be found who take a real interest in the progress of education, for one who cares nothing about it.

This is a fearful odds where there is a likelihood of opposition;—and opposition may be expected. For there will be influences in many of the true friends of education, derived from old prejudices within, combined with the pressure of conflicting sentiments in their friends from without, which will render the task of establishing new and sound principles in this first of the sciences an irksome, and even a hazardous employment. Coldness or opposition from those whom we honour and love is always painful; and yet it should be endured, rather than that the best interests both of the present and future generations should be sacrificed. The opinions of all good men deserve consideration;—but when they are merely opinions, and are not founded on reason, they are at best but specious; and when they are opposed to truth, and are contrary to experience, a zealous adherence to them becomes sinful and dangerous. Such persons ought to commend, rather than blame, the reformer in education, when he declines to adopt ancient [Pg 24] dogmas which he finds to be useless and hurtful: And at all events, if all have agreed to disregard the authority of an Aristotle or a Newton, when opposed to new facts and additional evidence, the Educationist must not allow himself to be driven from the path of fact and experience by either friends or enemies. No authority can make darkness light;—and although he may be opposed for a time, and the public mind may be abused for a moment, it will at last correct itself, and truth will prevail.

But the friends of education ought in no case to put the perseverance of those who labour for its improvement to so severe a trial. They ought in justice, as well as charity, to cultivate a forbearing and a candid spirit; and they will have many opportunities of exercising these virtues during the progress of this science. Education is confessedly but in its infancy; and therefore it must grow much, and change much, before it can arrive at maturity. But if there be an increasing opposition to all advance, and if a stumbling-block be continually thrown in the way of those who labour to perfect it, the labourers may be discouraged, and the work be indefinitely postponed. Let all such then guard against a blind opposition, or an attempt to explain away palpable facts, merely because they lead to principles which are new, or to conclusions which are at variance with their pre-conceived opinions. If they persevere in a blind opposition, they may find at last that they have been resisting truth, and defrauding their neighbour. Truth can never be the enemy of man, although many inadvertently rank themselves among its opponents. The resistance which has invariably been offered to every important discovery hitherto, should be a beacon to warn the inconsiderate and the prejudiced against being over-hasty in rejecting discoveries in education; and the obloquy that now rests on the memory of such persons, should be a warning to them, not to plant thorns in their own pillows, or now to sow "the wind, lest they [Pg 25] at last should reap the whirlwind."

## CHAP. III.

### *On the Improvement of Teaching as an Art.*

As Education on account of its importance takes precedence in the sciences, so Teaching should rank first among the arts. The reasons for this arrangement are numerous; but the consideration of two will be sufficient.—The first is, that all the other arts refer chiefly to time, and the conveniences and comforts of this world; while the art of teaching not only includes all these, but involves also many of the interests of man through eternity.—And the second is, that without this art all the other arts would produce scarcely any advantage. Without education of some kind, men are, and must continue to be savages,—it being the only effectual instrument of civilization. It is the chief, if not the only means for improving the condition of the human family, and for restoring man to the dignity of an intelligent and virtuous being.

As "Science" is the investigation and knowledge of principles, so an "art" may be defined as a system of means, in accordance with these principles, for attaining some special end. Teaching is one of the arts; and it depends as entirely for its success upon a right application of the principles of the science of education, as the art of dying does upon the principles of chemistry. As an art, therefore, teaching must be subjected to all those laws which regulate the improvement of the other arts, and without which it can never be successfully carried on, far less perfected. These laws are now very generally understood; and we shall briefly advert to a few of them, which are necessary for our present purpose, and endeavour to point out their relation to the art of teaching. [Pg 26]

1. One of the first rules connected with the improvement of the arts is, that the artist have *a specific object in view, for the attainment of which all his successive operations are to be combined*.—The manufacturer has his *cloth* in prospect, before he has even purchased the wool of which it is to be composed; and it is the desire of procuring cloth of the most suitable quality, and by the easiest means, that compels him to draw liberally and constantly from the facts ascertained, and the principles developed, by the several sciences. From the science of mechanics he derives the various kinds of machinery used in the progressive stages of its production; and from the science of chemistry he obtains the processes of dying, and printing, and dressing. But he never troubles himself about the science of mechanics or of chemistry in the abstract; he thinks only of his cloth, and of these sciences as means to assist him in procuring it. He is careful of his machinery, and is constantly alive to the mode of its working, and is thus prompted to adopt such improvements as observation or experience may suggest; but it is not the machinery of itself that he either cares for, or thinks about. No; it is still the cloth that he keeps in view; and his machinery is esteemed or slighted, adopted or abandoned, exactly in proportion as it forwards his object. The processes necessary in the different departments of his establishment, are complicated and various, and to a stranger they are both curious and instructive; but it is neither the labour nor the variety that he is seeking. His is a very different object; and of this object he never loses sight; for the varied operations of stapling and carding, of spinning and weaving, are nothing more than means which he employs for accomplishing his end. He knows the uses of the whole complicated operations; and he sees at a glance, and can tell in a moment, how each in its turn contributes to the great object of all,—the production of a good and marketable cloth. [Pg 27]

Now this law ought to be applied with the utmost strictness to the art of teaching. For if teaching be really an art,—that is, a successive combination of means,—it should undoubtedly be a combination of means to some specific end. Nothing can be more obvious, than that a man who sits down to work, should know what he intends to do, and how he is to do it. Such a line of conduct should be imperatively demanded of the teacher, both on account of the importance of his work, and of the immense value of the material upon which he is to operate. The end he has in view, whatever that end may be, ought to be correctly defined before he begins; and no exercise should upon any account be prescribed or demanded from his pupils, which does not directly, or indirectly at least, conduce to its attainment. To do otherwise is both injudicious and unjust. For if the operations of the husbandman during spring have to be selected and curtailed with the strictest attention to time and the seasons, how carefully ought the energies and the time of youth to be economized, when they have but one short spring time afforded them, during which they are to sow the seed which shall produce good or evil fruit for eternity? As to what this great end which the teacher ought steadily to contemplate should be, we shall afterwards enquire; at present we are desirous only of establishing this general law in the art of teaching, that there should be an end accurately defined, and constantly kept in view; and for the attainment of which every exercise prescribed in the school should assist. The teacher who does otherwise is travelling in the dark, and compelling labour for labour's sake;—like the manufacturer who would keep all his machinery in motion, not to make cloth, but to appear to be busy.

2. Another law adopted in the successful prosecution of the arts is, *to use the best known means for attaining any particular end*.—This law is well known in all the other arts, and success [Pg 28]

invariably depends upon its adoption. The fields are not now tilled by the hoe, nor is cotton spun by the hand. These modes of operating have no doubt the recommendation of antiquity; but here antiquity is always at a discount, and no one doubts the propriety of its being so. The arts are advancing; and they who would impede their progress on the plea of not departing from the usages of antiquity, would be pitied or laughed at.

The art of teaching, like the other arts, depends for its success on a strict adherence to this law; and the fear of departing in this case from the particular usages of our ancestors is equally unreasonable. Soft ground in the valleys compelled them to travel their pack horses right over the hills, and the want of the "Jenny" made them spin their yarn by the hand; but still, the same principle which guided them in the adoption of those methods, was strictly the one which we are here recommending, that of "using the best *known* means for accomplishing the particular end." Those who adopt the principle do most honour to their sagacity; while their shallow admirers, by abandoning the principle, and clinging to their necessarily imperfect mode of applying it, at once libel their good sense, and dishonour those whom they profess to revere. As society is rapidly advancing, paternal affection would undoubtedly have prompted them to advise their descendants to take the benefits of every advance;—and it would be as reasonable for us to suppose, that if they were now alive, they would advise us to travel over the hills on their old roads, or make our cloth in the old way, as to think they would be gratified by our continuing to use exercises in education, which sound philosophy and experience have shewn to be fallacious and hurtful, or that they would be displeased by the use of those which extensive experiment has now proved to be natural, easy, and efficient.

These ancestral trammels have all been shaken off, wherever the acquisition of money is concerned. The mechanical processes of his forefathers have no charm for the modern manufacturer, when he can attain his object more economically by a recent improvement. Neither does he go blindfold upon a mere chance,—seldom even upon a sagacious conjecture,—unless there be some good grounds for its formation. In every successive stage of his operations, he is awake to the slightest appearance of defect; and he hesitates not a moment in abandoning a lesser good for a greater, whenever he perceives it. He husbands time;—he husbands expense;—he husbands supervision and risk. Every step with him is a step in advance;—every operation has a design;—every movement has a meaning;—and he makes all unite for the attainment of one common object. Can we doubt that, in like manner, the most rigid economy of time and labour ought to be adopted in the art of teaching? When the end has once been distinctly defined, it ought steadily to be kept in view; and no exercise should be prescribed which does not contribute to its attainment. There should be no bustling about nothing; no busy idleness; no fighting against time; no unnecessary labour, nor useless exhaustion of the pupil's energies. The time of youth is so precious, and there is so much to be done during it, that economy here is perhaps of more importance than in any thing else. Every book or exercise, therefore, which has not a palpable tendency to forward the great object designed by education, should by the teacher be at once given up. [Pg 29]

3. Another law which experience has established as necessary for the perfecting of any of the arts is, *a fair and honest application of the successive discoveries of science to its improvement*.—This has been the uniform practice in those arts which have of late been making such rapid progress. The artist and mechanic are never indifferent to the various improvements which are taking place around them; nor do they ever stand apart, till they are forced upon their notice by third parties, or public notoriety. There is, in the case of the manufacturer, no nervous timidity about innovation; nor does he ever attempt to deceive himself by ignorantly supposing that the change can be no improvement.—Nor will he suffer himself to be deceived by others. His workmen are not allowed, to save themselves future trouble, to be careless or sinister in their trials of the improvement; for he knows, that however it may be with them, yet if his neighbour succeeds, and he fails, it may prove his ruin. [Pg 30]

Such also should be the conduct of the teacher. The time has now gone by when parents were ignorant, either of what was communicated at school, or the manner in which it was taught. The improvement of their children by education, has become a primary object with all sensible parents; and they will never again be satisfied with a school or a teacher, where solid instruction, and the most useful kind of knowledge are not imparted. Ameliorations in his art, therefore, is now as necessary to the teacher, as improvements in machinery are to the mechanic and the manufacturer. It will no longer do for him to say, "I can see no improvement in the change," if the parents of his pupils have been able to discover it; and the teacher who stands still in the present forward march of society, will soon find himself left alone. The practical Educationist, like the mechanician, ought no doubt to be cautious in adopting changes upon chance; but wherever an improvement in his art has been sufficiently proved by fair experiment or long experience, and particularly, when the principle upon which its success depends has been fully ascertained, his rejecting the change on the plea of inconvenience, or from the fear of trouble, is not only an act of injustice to the parents of his pupils, but is a wrong which will very soon begin to re-act upon his own interests. The effect of indifference to improvement in this, as in other arts, may not be felt for a time; but as soon as *others* have made themselves masters of the improvements which he has rejected, the successive departure of his pupils, and the melting away of his classes, will at last awaken him to a sense of his folly, when it may be too late. Such has usually been the effect of remissness in the other arts; and the present state of the public mind in regard to education, indicates a similar result in similar circumstances. [Pg 31]

In connection with this part of our subject, it may here be necessary to remark, that as the experience of all teachers may not be alike in the *first working* of a newly applied principle,—the

principle itself, when fully ascertained, is not on that account to be either belied or abandoned. There are many concurring circumstances, which may make an exercise that succeeds well in the hands of one person, fail in the hands of another; but to refuse credence to the principle itself, because he cannot as yet successfully apply it, is neither prudent nor wise. There are chemical experiments so exceedingly nice, and depending on so many varying circumstances, that they frequently fail in the hands of even good operators. But the chemical principles upon which they rest remain unchanged, although individual students may have not been able successfully to apply them. If their professor has but *once* fairly and undoubtedly succeeded in ascertaining the facts on which the principle is based, their failure for a thousand times is no proof that the ascertained principle is really a fallacy. In like manner, any important principle in education, if once satisfactorily ascertained, is a truth in the science, and will remain a truth, whoever may believe or deny it. If it has been proved to produce certain effects in certain given circumstances, it will in all future times do the same, when the circumstances are similar. The inability, therefore, of a parent or teacher, to produce equal effects by its means, may be good enough [Pg 32] proof of his want of skill, but it is no proof of the want of inherent power in the principle itself. The rings of Saturn which my neighbour's telescope has clearly brought to view, are not blotted from the heavens because my pocket glass has failed to detect them.

It has been by attention to these, and similar rules, that all the secular arts have advanced to their present state; and the art of teaching must be perfected by similar means. There ought therefore to be a distinct object in view on the part of the teacher,—a specific end which he is to endeavour to arrive at in his intercourse with his pupil. For the attainment of this end, he must employ the best and the surest means that are in his power; for the same purpose, he ought honestly and fairly to apply the successive discoveries of science as they occur; and should never allow himself to abandon an exercise founded upon ascertained principles, merely because he at first finds difficulty in putting it in operation.

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## CHAP. IV.

### *On the Establishment of Sound Principles in Education.*

The application of the foregoing remarks to our present purpose, is a matter of great practical importance. It has indeed been owing chiefly to their having been hitherto overlooked, that education has been left in the backward state in which we at present find it.

But if, as we have seen, education must bend to the same rigid discipline to which the other sciences have had to submit,—and if teaching can be improved only by following the laws which have determined the success of the other arts—the question naturally arises, "What is to be done [Pg 33] now for education?"—"Where are we to begin?"—"How are we to proceed?"—"In what manner are the principles of the science to be investigated, so that they shall most extensively promote the success of the art? and how is the art to be cultivated, so that it may, to the fullest extent, be benefited by the science?" To these enquiries we shall in the present chapter direct our attention.

The method of investigating the operations of Nature in the several sciences is very nearly alike in all. For example, in the science of chemistry, as we have formerly noticed, the first object of the philosopher would be to take a comprehensive view of his whole subject, and endeavour to separate the substances in Nature according to their great leading characteristics. He would at once distinguish mineral substances as differing from vegetables;—and vegetable substances as differing from animals;—thus forming three distinct classes of objects, blending with each other, no doubt, but still sufficiently distinct to form what have been called the three kingdoms of Nature. The various objects included under each of these he would again subdivide according to their several properties;—and as he went forward, he would endeavour, by careful examination and experiment, to ascertain, not only their combinations, but also the characteristic properties of their several elements. The chemist, in this method of investigating Nature, almost always proceeds upwards, analytically, advancing from the general to the special, from the aggregate to its parts, endeavouring to ascertain as he proceeds the laws which regulate their composition and decomposition, for the purpose simply of endeavouring to imitate them. By this means alone he expects to perfect the science, and to benefit the arts.

In the science of Botany, Zoology, Anatomy, Physiology, and almost all the others, the same plan has been adopted with invariable success. The subject, whatever it be, is looked upon as a [Pg 34] whole, and then separated into its great divisions;—these again, are subdivided into classes; and these again, into orders, genera, species, and varieties, by which means each minute part can be examined by itself in connection with the whole; the memory and the judgment are assisted in their references and application; and order reigns through the whole subject, which otherwise would have been involved in inextricable confusion.

In education, as in the other sciences, Nature is our only sure teacher; and the Educationist, therefore, who desires success, must proceed in the investigation in a similar way. He must first take a comprehensive view of Nature's educational processes; divide them into their several kinds; and subdivide these again when necessary, that each may be viewed alone. He must then ascertain the nature and the object of these processes, and observe the means and the methods employed for accomplishing them, that he may, if possible, be enabled to *imitate* them. In this way, and in this way alone, he is to perfect the science of education, and benefit the art of teaching.

That this is the best way yet known of proceeding in investigating and improving the science of education, experience has already proved; and that it must theoretically be so, we think can admit of little doubt. The operations of Nature exhibit the soundest philosophy, and the most perfect examples of art. The materials she selects are the most suitable for the purpose; the means she employs are always the most simple and efficient; and her ends are invariably gained at the least expense of material, labour, and time. In the pursuit, therefore, of any object or end similar to that in which we find Nature engaged, man's truest wisdom is to distrust his own speculations, and to learn from her teaching. He should, with a child-like docility, follow her leadings and imitate her operations, both as it respects the materials he is to employ, and the [Pg 35] mode and order in which he is to use them. Were an artist to find himself at a loss for the want of an instrument to accomplish some particular purpose, or some new material upon which to operate, or some special, but as yet unknown means for attaining some new and important object,—we are warranted by facts to say, that the natural philosopher would be his best instructor. For if he can be directed to some similar operation of Nature, or have pointed out to him some one or more of Nature's pupils,—some animal or insect, perhaps,—whose labour or object is similar to his own, he will most probably find there, or have suggested to him by their mode of procedure, the very thing he is in search of. By studying their methods of operating, and the means employed by them for accomplishing their end, some principle or device will be exhibited, by the imitation of which his own special object will most readily and most successfully be attained. Every day's experience gives us additional proof of the importance and soundness of this suggestion. For it is a remarkable fact, that there is scarcely a useful mechanical invention to which genius has laid claim,—and deservedly laid claim,—that has not its prototype somewhere in nature. The same principles, working perhaps in the same manner, have been silently in operation, thousands of years before the inventor was born; but which, from want of observation, or the neglect of its practical application to useful purposes, lay concealed and useless. This culpable neglect in practically applying the works and ways of God as he intended, has carried with it its own punishment; for thousands of the conveniences and arts, which at present smooth and adorn the paths of civilized life, have all along been placed within the reach of intelligent man. If he had but employed his intelligence, as he ought to have done, in searching them out, and had asked himself when he perceived them, "What does this teach me?" the very question would have suggested a use. This accordingly will be found to be the true way of studying nature, [Pg 36] and one especial design for which a beneficent Creator has spread out his works for our inspection. In proof, and in illustration of this fact, we may refer to the telescope, which has from the beginning had its type in the human eye;—to the formation of paper, which has been manufactured for thousands of years by the wasp;—to the levers, joints, and pulleys of the human body, of which the mechanist has as yet only made imperfect imitations;—and to the saw of an insignificant insect, (the saw-fly) which has never yet been successfully imitated by man.

In prosecuting our investigations into the science of education, therefore, our business is to study Nature in all the educational processes in which we find her occupied, and of which we shall find there are many;—to observe and collect facts;—to detect principles, and to discover the means employed in carrying them out, and the modes of their working;—to trace effects back to their causes, and then again to follow the effects through their various ramifications, to some ultimate end. These are the things which it is the business of the Educationist to investigate, and to record for the benefit of the teacher and his art.

The duty of the teacher, on the other hand, is to apply to his own purposes, and to turn to use in the prosecution of his objects, those facts discovered by the philosopher in the study of Nature. He should by all means understand the principles upon which Nature works, and the means which she employs for attaining her ends. He ought, as far as circumstances will allow, to arrive at his object by similar means; chusing similar materials, and endeavouring invariably to work upon the same model. By honestly following out such a mode of procedure, he must be successful; for although he can never attain to the perfection of Nature, yet this is obviously the best, if not the only method by which he can ever approximate towards it.

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# PART II.

# ON THE GREAT DESIGN OF NATURE'S TEACHING, AND THE METHODS SHE EMPLOYS IN CARRYING IT ON.

## CHAP. I.

### *A Comprehensive View of the several Educational Processes carried on by Nature.*

We have seen in the former chapters, that the most probable method of succeeding in any difficult undertaking is to learn from Nature, and to endeavour to imitate her. The first great question with the Educationist then should be, "Does Nature ever teach?" If he can find her so employed, and if he be really willing to learn, he may rest assured, that by carefully studying her operations, he will be able to detect something in the ends which she aims at, and the methods which she adopts for attaining these ends, that will lead him to the selection of similar means, and crown him ultimately with similar success.

Now we find that Nature does teach; and in so far as rational beings are concerned, whether angelic or human, it appears to be her chief and her noblest employment. In regard to the human family, she no doubt, at a certain period, intends that the task should be taken up and carried on by parents and teachers, under her controul; but when we compare the nature and success of their operations with hers, we perceive the immense inferiority of their best endeavours, and are obliged to confess, that in many instances, instead of forwarding her work, they either mar or destroy it. For in regard to the *matter* of their teaching, it may be observed, that they can teach [Pg 38] their pupils nothing, except what they or their predecessors have learned of Nature before;—and as to the *manner* in which it is taught, it is generally so very imperfect, that for their success, teachers are often indebted in no small degree to the constant interference of Nature, in what is ordinarily termed the "common sense" of their pupils, for rectifying many of their errors, and supplying innumerable deficiencies. Of this we shall by and by have to advert more particularly.

The educational operations of Nature are universal; and she attaches large rewards to diligence in attending to them. She evidently intends, as we have said, that the parent and teacher should take up, and follow out her suggestions in this great work; but even when this is delayed, or altogether neglected, her part of the proceedings is not abandoned. Nature is so strong within the pupil, and her educational promptings are so powerful, that even without a teacher, he is able for a time to teach himself. In man, and even among many of the more perfect specimens of the lower creation, Nature has suspended the larger portion of their comforts and their security, upon attention to her lessons, and the practical application of that which she teaches. The dog which shuns the person who had previously beaten him; the infant that clings to its nurse, and refuses to leave her; the boy who refuses to cross the ditch he never tried before; the savage who traces the foot-prints of his game; the man who shrinks from a ruffian countenance; and Newton, when the fall of an apple prompted him to pursue successively the lessons which that simple event suggested to him, are all examples of the teachings of Nature,—specimens of the manner in which she enables her pupils to collect and retain knowledge, and stimulates them to apply it. Wherever these suggestions of Nature are individually neglected, there must be discomfort and danger, and wretchedness to the *person* doing so; and wherever [Pg 39] they are not taken up by communities, and socially taught by education of some kind or another, *society* must necessarily remain little better than savage.—The opposite of this is equally true; for wherever they are personally attended to, the individual promotes his own safety and comfort; and when they are socially taken up and followed out by education, however imperfectly, then civilization, and national security, prosperity, and happiness, are the invariable consequences.

The information which we are to derive from the Academy of Nature, is to be found chiefly in those instances where she is least interfered with by the operations of others. In these we shall endeavour to follow her; and, by classifying her several processes, and investigating each of them in its order, we shall assuredly be able to arrive at some first principles, to guide us in imitating the modes of her working, and which will enable us, in some measure, to share in her success.

When we take a comprehensive view of the educational processes of Nature, we find them arranging themselves under four great divisions, blending into each other, no doubt, like the kingdoms of Nature and the colours of the rainbow, but still perfectly distinct in their great characteristics.

The *first* educational process which is observable in Nature's Academy, is the stimulating of her pupil to such an exercise of mind upon external objects, as tends powerfully and rapidly to expand and strengthen the powers of his mind. This operation begins with the first dawning of

consciousness, and continues under different forms during the whole period of the individual's life.

The *second* educational process, which in its commencement is perhaps coeval with the first, is Nature's stimulating her pupil to the acquisition of knowledge, for the purpose of retaining and using it.

The *third* consists in the disciplining of her pupil in the practical use, and proper application of the knowledge received; by which means the knowledge itself becomes better understood, better remembered, and much more at the command of the will than it was before:— [Pg 40]

And her *fourth* educational process consists, in training her pupil to acquire facility in communicating by language, his knowledge and experience to others.

The *first* of these four general departments in Nature's educational process, *is the developement and cultivation of the powers of her pupil's mind*.—This part of Nature's work begins at the first dawn of intelligence; and it continues through every other department of her educational process. For several months during infancy, sensation itself is but languid. The first indistinct perceptions of existence gradually give place to a dreamy and uncertain consciousness of personal identity.—Pain is felt; light is perceived; objects begin to be defined, and distinguished; ideas are formed; and then, but not till then, reflection, imagination, and memory, are gradually brought into exercise, and cultivated. It is the extent and strength of these faculties, as we shall afterwards see, that is to measure the educational progress of the child; and therefore it is, that the first object of Nature seems to be, to secure their proper developement. The child feels and thinks; and it is these first feelings and thoughts, frequently repeated, that enable it gradually to extend its mental operations. It is in this way only that the powers, of the mind in infants are expanded and strengthened, as there can be no mental culture without mental exercise. While a child is awake, therefore, Nature prompts him to constant and unwearied mental exertion; by which means he becomes more and more familiar with external objects; acquires a better command over his own mind in perceiving and remembering them; and [Pg 41] becomes more and more fitted, not only for receiving constant accessions of knowledge, but also for putting that knowledge to use.

The *second* part of Nature's educational process, we have said, consists in her powerfully stimulating her pupil to *the acquisition of knowledge*.—This, which we call the second part of Nature's operations, has been going on from an early period of the child's history, and it acts usually in conjunction with the first. As soon as an infant can distinguish objects, it begins to form ideas regarding them. It remembers their shape; it gradually acquires a knowledge of their qualities; and these it remembers, and, as we shall immediately see, is prompted to put to use upon proper occasions.—It is in the acquisition of this kind of knowledge that the principle of curiosity begins to be developed. The child's desire for information is increased with every new accession; and for this reason, its mental activity and restlessness, while awake, have no cessation. Every glance of the eye, every motion of the hands or limbs made to gratify its curiosity, as it is called, is only an indication of its desire for information:—Every sight or sound calls its attention; every portable object is seized, mouthed, and examined, for the purpose of learning its qualities. These operations at the instigation of Nature are so common, that they are scarcely observed; but when we examine more minutely into their effects, they become truly wonderful. For example, were we to hear of an infant of two or three years of age, having learned in the course of a few months to distinguish each soldier in a regiment of Negroes, whose features their very parents perhaps would have some difficulty in discriminating; if he could call each individual by his name; knew also the names and the uses of their several accoutrements; and, besides all this, had learned to understand and to speak their language;—we would be surprised and incredulous. And yet this would be an accumulation of knowledge, not much [Pg 42] greater than is attained in the same space of time by many of the feeble unsophisticated pupils of Nature.—Infants, having no temptation to depart from her mode of discipline, become in a short period acquainted with the forms, and the uses, and even the names, of thousands of persons and objects, not only without labour, but with vast satisfaction and delight.

The training of her pupils to *the practical use of their knowledge*, forms the *third* department in Nature's educational process.—This is the great end which the two previous departments were designed to accomplish. This is Nature's *chief* object;—all the others are obviously subordinate. The cultivation of the mind, and the acquisition of knowledge were necessary;—but that necessity arose from the circumstance of their being preparatory to this. Nature, in fact, appears to have stamped this department of her operations almost exclusively with her own seal;—repudiating all knowledge that remains useless, and in a short time blotting it entirely from the memory of her pupils; while that portion of their acquired knowledge, on the contrary, which is useful and is put to use, becomes in proportion more familiar, and more permanent. It is also worthy of remark, that the knowledge which is most useful, is always most easily and pleasantly acquired.

The superior importance of this department of education is very observable. In the previous departments of Nature's educational process, the child was induced to *acquire* new ideas;—in this he is prompted to *make use of them*. In the former he was taught to *know*;—in this he is trained to *act*. For example, if he has learned that his nurse is kind, Nature now prompts him to act upon that knowledge, and he accordingly strains every nerve to get to his nurse;—if he has learned that comfits are sweet, he acts upon that knowledge, and endeavours to procure them;—and if he has once experimentally learned that the fire will burn, he will ever afterwards keep [Pg 43] from the fire.

Last of all comes the *fourth*, or supplementary step in this beautiful educational process of

Nature. It consists in gradually training her pupil to *communicate the knowledge and experience which he has attained*.—It is probable that Nature begins this part of her process before the child has acquired the use of language;—but as it is by language chiefly that man holds fellowship with man, it is not till he has learned to speak that the mental exercise on which its success depends, becomes sufficiently marked and obvious. It consists, not in the acquisition of language so much, as in the use of language after it has been gained. The pupil is for this purpose prompted by Nature to think and to speak at the same moment;—mentally to prepare one sentence, while he is giving utterance to its predecessor. That this is not the result of instinct, but is altogether an acquisition made under the tuition of Nature by the mental exertions of the infant himself, is obvious from the fact, that he is at first incapable of it, and never pronounces three, and very seldom two words consecutively without a pause between each. This the child continues to do after he is perfectly familiar with the meaning of many words, and after he can also pronounce each of them individually. In giving utterance to the first words which he uses, there is an evident suspension of the mind in regard to every thing else. His whole attention appears to be concentrated upon the word and its pronunciation. He cannot think of any thing else and pronounce the word at the same time; and it is not till after long practice that he can utter two, three, or more words in a sentence, without hesitation and a decided pause between them. It is only by degrees that he acquires the ability to utter a phrase, and at last a short sentence, without interruption. Nature prompts the child to this exercise, which from the first attempt, to [Pg 44] the full flow of eloquence in the extemporaneous debater, consists simply in commanding and managing one set of ideas in the mind, at the moment the person is giving utterance to others. This cannot be done by *the child*, but it is gradually acquired by *the man*; and we shall see in its proper place, that this acquisition is entirely the result of a mental exercise, such as we have here described, and to which various circumstances in childhood and youth are made directly subservient.

Here then we have the highway of education, marked off, and walled in by Nature herself. That these four great departments in her educational process will be much better defined, and their parts better understood, when experience has given more ample opportunities for their observation, cannot be doubted; and it is not improbable, that future investigations will suggest a different arrangement of heads, and a different modification of their parts also; but still, the great outline of the whole, we think, is so distinctly marked, that, so far as they go, there can be little mistake; and by following them, we are most likely to obtain a large amount of those benefits which education is intended to secure.—To excel Nature is impossible; but by endeavouring to imitate her, we may at least approach nearer to her perfections.

It is not enough, however, for us to perceive the great outlines of Nature's operations in education; we must endeavour to follow her into the details, and investigate the means which she employs for carrying them into practical effect. We shall therefore take up the several departments above enumerated in their order, and endeavour to trace the laws which regulate her operations in each, for the purpose of assisting the teacher in his attempts to imitate them.

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## CHAP. II.

### *On the Method employed by Nature for cultivating the Powers of the Mind.*

The *first* step in Nature's educational process, is the cultivation of the powers of the mind; and, without entering into the recesses of metaphysics, we would here only recall to the recollection of the reader, that the mind, so far as we yet know, can be cultivated in no other way than by voluntary exercise:—not by mere sensation, or perception, nor by the involuntary flow of thought which is ever passing through the mind; but by the active mental operation called "thinking,"—the voluntary exertion of the powers of the mind upon the idea presented to it, and which we have denominated "reiteration,"[1] as perhaps best descriptive of that thinking of the presented idea "over again," by which alone, as we shall see, the mind is cultivated, and knowledge increased.

It is also here worthy of remark, that the cultivation of the powers of her pupil's mind, as a preliminary to their acquiring and applying of knowledge, appears to be a settled arrangement of Nature, and one which must be rigidly followed by the teacher, wherever success is to be hoped for. Analogy, in other departments of Nature's operations, proves its necessity, and points out its wisdom; for she is never premature, and never stimulates her pupils to any work, till they have been properly prepared for accomplishing it. Hence the consistency and importance of commencing the process of education, by expanding and cultivating the powers of the mind, preparatory to the future exertions of the pupil; and hence also the wisdom of requiring no more from the child, than the state of his mental powers at the time are capable of performing. Our [Pg 46]

object, at present, is to discover the means employed by Nature for accomplishing this preliminary object, that we may, by imitating her plans, obtain the greatest amount of benefit.

In infancy, and during the early part of a child's life, each of the thousands of objects and actions which are presented to its observation, falls equally on the organs of sense, and each of them *might*, if the child had pleased, have become objects of perception, as well as objects of sensation. But it is evident, that till the mind occupy itself upon one or more of these objects, there can be no mental exercise, and, of course, no mental culture. On the contrary, if the mind shall single out any one object from the mass that surrounds it,—shall entertain the idea suggested by its impression on the organs of sense, and think of it—that is, review it on the mind —there is then mental exercise, and, in consequence, mental cultivation. From this obvious truth it necessarily follows, that the cultivation of the mind does not depend upon the multitude of objects presented to the observation of a child, but only on those which it really does observe,—which it looks at, and thinks upon, by an active voluntary exercise of its own powers. The child, no doubt, *might* have smelt every odour; it *might* have listened to every sound that entered the ear; and it *might* have looked upon every image that entered the eye; but we know that it did not. A few of them only were thought of,—the ideas which they suggested were alone "reiterated" by the mind,—and therefore they, and they alone, tended to its cultivation.

As this act of the mind lies at the root of all mental improvement, during every stage of the pupil's education, it becomes a matter of considerable importance, that its nature, and mode of operation, should be thoroughly understood.

Let us for this purpose suppose that a lighted candle is suddenly presented before a young [Pg 47] infant. He looks at it; he thinks of it; his mind is employed with the flame of the candle in a manner quite different from what it is upon any thing else in the room. All the other images which enter the eye fail to make an impression upon the mind; but this object which the child looks at,—observes,—does this; and accordingly, while it is passive as to every thing else, the mind is found to be actively engaged with the candle. He not only sees it, but he looks at it. This, and similar "reiterations" of ideas by the mind, frequently repeated by the infant, gradually communicate to it a consciousness of mental power, and enable him more and more easily to wield it. Every such instance of the reiteration of an idea,—of the voluntarily exercise of active thought,—strengthens the powers of the mind, so that he is soon able to look at and follow with his eyes other objects, although they are much less conspicuous than the glare of a candle.

When we examine the matter a little farther in regard to infants, we perceive, that all the little arts used by the mother or the nurse, to "amuse the child," as it is called, are nothing more than means employed to excite this reiteration of ideas by the mind. A toy, for example, is presented to the infant, and his attention is fixed upon it. He is not satisfied with passively seeing the toy, as he sees all the other objects in the room, but he actively looks at it. Nor is this enough; the toy is usually seized, handled, mouthed, and turned; and each movement prompts the mind to active thought,—to reiterate the idea which each of the sensations suggests. These impressions are no doubt rapid, but they are real; and each of them has been reiterated,—actively thought of,—before they could either be received, or remembered; and it is only by these impressions frequently repeated, in which the mind is vigorously and delightfully engaged, that it acquires [Pg 48] that activity and strength which we so frequently witness in the young.

At a more advanced period during childhood and youth, we find the cultivation of the mind still depending upon the same principle. It is not enough that numerous objects be presented to the senses of the pupil; or that numerous words or sounds be made to vibrate in his ears; or even that he himself be made mechanically to utter them. This may be done, and yet the mind may remain perfectly inactive with respect to them all:—Nay, experience shews, that during such mechanical exercises, his mind may all the time be actively employed upon something else. There must therefore, not only be a hearing, or a reading of the words which convey an idea, but he must make the idea his own, by thinking it over again for himself. Hence it is that mental vigour is not acquired in proportion to the number of pages that the pupil is compelled to read; nor to the length of the discourses which are delivered in his hearing; nor to the multiplicity of objects placed before him. It is found entirely to depend upon his diligence in thinking for himself;—in reiterating in his own mind the ideas which he hears, or reads, or which are suggested to his mind by outward objects. This is still the same act of the mind which we have described in the infant, with this very important difference, however, that a large portion of his ideas is now suggested by *words*, instead of *things*; but it is the ideas, and not the words, that the mind lays hold of, and by which its powers are cultivated. When this act therefore is successfully forced upon a child in any of his school operations, the mind will be disciplined and improved;—but wherever it is not produced, however plausible or powerful the exercise may *appear* to be, it will on scrutiny be found to be totally worthless in education,—a mere mechanical operation, in which, there being no mental exertion, there can be no mental culture.

In the adult, as well as in the young and the infant, the culture of the mind is carried on in [Pg 49] every case by the operation of the same principle.—However various the means employed for this purpose may be, they all depend for their success upon this kind of active thought,—this reiteration of the *ideas* suggested in the course of reading, hearing, observation, or reasoning. A man may turn a wheel, or point pins, or repeat words from infancy to old age, without his mind's being in the least perceptible degree benefited by such operations; while the mill-wright, the engineer, or the artist, whose employments require varied and active thought, cannot pursue his employment for a single day, without mental culture, and an acquisition of mental strength.—The reason is, that in mere mechanical operations there is nothing to induce this act of reiteration,—this active mental exercise of which we are speaking. In the former case, the individual is left to

the train of thought in the mind, which appears to afford no mental cultivation;—whereas, in the latter, the mind is, by the acts of comparing, judging, trying, and deciding, which the nature of his occupation renders necessary, constantly excited to active thought,—that is, to the reiteration of the several ideas presented to it.

These remarks may be thought by some to be exceedingly commonplace and self-evident.—It may be so. If they be admitted, we ask no more.—Our purpose at present is answered, if we have detected a principle in education, by the operation of which the powers of the mind are invariably expanded and strengthened;—an effect which, so far as we yet know, in its absence never takes place. It is by means of this principle alone that Nature accomplishes this important object, both in young and old; but its effects are especially observable in the young, where, her operations not being so much interfered with, we find her producing by its means the most extraordinary [Pg 50] effects, and that even during the most imbecile period of her pupil's existence.

In concluding this part of our investigation, we would very briefly remark, that the existence of this principle in connection with the cultivation of the mind, accounts in a very satisfactory manner for the beneficial results which usually accompany the study of languages, mathematics, and some other branches of education similar in their nature.—These objects of study, when once acquired, may never afterwards be used, and will consequently be lost; but in learning them the pupil was compelled to think,—to exercise his own mind on the subjects taught,—to reflect, and to reiterate the ideas communicated to him, till they had been fully mastered. The mental vigour which was at first forced upon the pupil, by these beneficial exercises, remains with him, and is exercised upon other objects, as they are presented to his observation in ordinary life.—The mind in commencing these studies gradually emancipates itself from the mechanical tendencies which an improper system of teaching had previously formed, and now gathers strength daily by this natural mode of exercising its powers. It is the effects of this kind of discipline that constitute the chief element of a cultivated mind. In this principally consists the difference between a man of "liberal education," and others who have been less highly favoured.—His superiority does not lie in his ability to read Latin and Greek,—for these attainments may long ago have been forgotten and lost;—but in the state of his mind, and the superior cultivation of the mental powers.—He possesses a clearness, a vigour, and a grasp of mind above others, which enable him at a glance to comprehend a statement;—to judge of its accuracy;—and, without effort, to arrange and communicate his ideas concerning it. This ability, as we have seen, can be acquired only by active mental exercise, and is not necessarily the result of extensive reading, nor is it always [Pg 51] accompanied by extensive knowledge. It is the natural and the necessary product of mental discipline, through which the above described act of "reiteration," like a golden thread, runs from beginning to end. It is the fire of intellect, kindled at first perhaps by classical, and mathematical studies; but which now, collecting force and fuel from every circumstance of life, glows and shines, long after the materials which first excited the flame have disappeared.

If then, as we formerly explained, the arts are to derive benefit from the investigations of science, we are led to the conclusion, that the wisdom of the Teacher will consist in taking advantage of the principle which has been here exhibited. He should not speculate nor theorize, nor go forward inconsiderately in using exercises, the benefits of which are at least questionable; but he ought implicitly to follow Nature in the path which she has thus pointed out to him. One chief object with him should be, the cultivation of the minds of his pupils; and the only method by which he can attain success in doing so has now been stated. He must invent, or procure some exercise, or series of exercises, by which the act of "reiteration" in the minds of his pupils shall be regularly and systematically carried on.—He must induce them to think for themselves, and to exercise the powers of their own minds deliberately and frequently,—in the same manner as we see Nature operating in the mind of a lively and active child. When he can accomplish this, he will, and he must succeed; whereas, if he allow an exercise to be prepared where this act of the mind is absent, he may rest assured that he is deceiving both himself and the child.—The laws of Nature are inflexible; and while she will undoubtedly countenance and reward these who act upon the principles which she has established, she will as certainly leave those who neglect them to eat the "fruit of their own doings."—But the pupil, more than the Teacher is the sufferer. [Pg 52] Under the pure discipline of Nature in the infant and the child, learning is not only their business, but their delight; and it is only when her principles are unknown, or violently outraged, that education becomes a burden, and the school-house a prison.

**FOOTNOTES:**

[1] Note A.

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## CHAP. III.

### *On the Means by which Nature enables her Pupils to acquire Knowledge.*

The *second* stage of the pupil's advance under the teaching of Nature is that in which she prompts and assists him in the acquisition of knowledge.—The importance of this department of a child's education has uniformly been acknowledged;—so much so, indeed, that it has too frequently absorbed the whole attention of the Teacher, as if the possession of knowledge were the whole of education.—That this is a mistake we shall afterwards see; because the value of knowledge must always be in proportion to the use we can make of it; but it is equally true, that as we cannot use knowledge till we have acquired it, its acquisition as a preliminary step is of the greatest importance. Our intention is at present, to enquire into the means employed by Nature, for enabling her pupils to acquire, to retain, and to classify their knowledge; so that, by ascertaining and imitating her methods, we may in some degree share in her success.

For some time during the early years of childhood Nature is the chief, or the only Teacher; and the contrast between her success at that time, and the success of the parent or teacher who succeeds her, is very remarkable, and deserves consideration.

When we examine this process in the case of infants, we see Nature acting without interference, and therefore with undeviating success. Within a few months after the child has [Pg 53] attained some degree of consciousness, we find that Nature, under every disadvantage of body and mind, has succeeded in communicating to the infant an amount of knowledge, which, when examined in detail appears very wonderful.—The child has been taught to know his relations and friends; he has acquired the ability to use his limbs, and muscles, and organs, and the knowledge how to do so in a hundred different ways. He has become familiar with the form, the colour, the texture, and the names of hundreds of articles of dress, of furniture, of food, and of amusement, not only without fatigue, but in the exercise of the purest delight, and with increasing energy. He has begun to contrast objects, and to compare them; and this capacity he evinces by an undeviating accuracy in choosing those things which please him, and in rejecting those things which he dislikes. But above all, the infant, along with all this substantial knowledge, has been taught to understand a language, and even to speak it. The fact of all this having been accomplished by a child of only two or three years of age, is so common, that the mysterious principles which it involves, are too generally overlooked. We thoughtlessly allow them to escape observation, as if they were mere matters of instinct, and were to be ranked with the spider's catching its prey, or the sparrow's building its nest. But the principles which regulate these different operations are perfectly dissimilar. In the case of the spider and the sparrow there is no teaching, and, of course, no learning. Their first web, and their first nest, are as perfect as the last; but in the case of the infant, with only two or three exceptions, there is nothing that he does, and nothing that he knows, which he has not really learned,—acquired by experience under the tuition of Nature, by the actual use of his own mental and physical powers.

The benefits accruing to education, from successfully imitating Nature in this department of [Pg 54] her process, will be incalculable; not only in adding to the amount of knowledge communicated, but in the ease and delight which the young will experience in acquiring it. All must admit that the pleasure, as well as the rapidity, of the educational process in the young, continues only during the time that Nature is their teacher;—and that her operations are generally checked, or neutralized by the mismanagement of those who supersede her work, and begin to theorize for themselves. The proof of this is to be found in the fact, that although a child is much less capable of acquiring knowledge between one and three years of age, than he is between eight and ten; yet, generally, the amount of his intellectual attainments by his school exercises, during the two latter years, bears no proportion to those of the former, when Nature *alone* was his teacher. In the one case, too, his knowledge was acquired without effort or fatigue, and in the exercise of the most delightful feelings;—in the other, quite the reverse.

That we shall ever be able to equal Nature in this part of her educational process, is not to be expected; but that, by following up the principles which she has developed, and imitating the methods by which she accomplishes her ends, we shall become more and more successful, there can be no doubt. The method, therefore, to be adopted by us is, to examine carefully the principles which she employs with the young, through the several stages of her process, and then, by adopting exercises which embody these principles, to proceed in a course similar to that which she has pointed out.

In prosecuting this plan, then, our object must be, first, to examine generally the various means employed by Nature, in the acquisition of knowledge by the young,—and then to attend more in detail to the mode by which she applies the principles involved in each. [Pg 55]

These general means appear to consist of four distinct principles, which, for want of better definitions, we shall denominate "Reiteration," "Individuation, or Abstraction," "Grouping, or Association," and "Classification, or Analysing."[2]

The *first* is the act of "Reiteration," of which we have already spoken, as the chief instrument in cultivating the powers of the mind, and without which, we shall also find, there can be no acquisition of knowledge. The *second* is the principle of "Individuation," by which Nature communicates the knowledge of single ideas, or single objects, by constraining the child to concentrate the powers of its mind upon one object, or idea, till that object or idea is familiar, or, at least, known. The *third* is the common principle of "Grouping, or Association," and appears to depend, in some degree, on the imaginative powers, by which a child begins to associate objects or truths together, after they have become individually familiar; so that any one of them, when afterwards presented to the mind, enables the pupil at a glance, to command all the others which were originally associated with it. The *fourth* is the principle of "Classification, or Analysing," by

which the mind distributes objects or truths according to their nature,—puts every truth or idea, as it is received, into its proper place, and among objects or ideas of a similar kind. This classification of objects is not, as in the principle of grouping, regulated according to their accidental relation to each other, by which the canary and the cage in which it is confined would be classed together; but according to their nature and character, by which the canary would be classified with birds, and the cage among other articles of household furniture. All knowledge, so far as we are aware, appears to be communicated and retained for use, by means of these four principles; and we shall now proceed to examine the mode in which each of them is employed by Nature for that purpose. [Pg 56]

**FOOTNOTES:**

[2] Note A.

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## CHAP. IV.

### *On Nature's Method of communicating Knowledge to the Young by the Principle of Reiteration.*

We have, in a former chapter, endeavoured to describe that particular act of the mind which generally follows simple perception, and by which an idea, when presented to it, is made the subject of *active thought*, or is "*reiterated*" again to itself. We have found upon good evidence, that it is by this process, whether simple or complex, that the powers of the mind are cultivated; and we now proceed to shew, that it is by the same act, and by it alone, that any portion of knowledge is ever communicated.[3] No truth, or idea of any kind, can make an effective entrance into the mind, or can find a permanent lodgement in the memory, so as to become "knowledge," until it has successfully undergone this process.

There are two ways by which we usually acquire knowledge:—The one is by *observation*, without the use of language, and which is common to us with those who are born deaf and dumb; and the other is *through the medium of words*, either heard or read. In both cases, however, the knowledge retained consists entirely of the several *ideas* which the objects or the words convey; and what we are now to shew, is, that these ideas thus conveyed, can neither be received by the mind, nor retained by the memory, till they have undergone this process of "reiteration." While, on the contrary, it will be seen that, whenever this process really takes place, the idea thus reiterated does become part of our knowledge, and is, according to circumstances, more or less permanently fixed upon the memory. We shall for this purpose endeavour to trace the operation of the principle, both in the case of ideas communicated by objects without language, and in those conveyed to the mind by means of words. [Pg 57]

That this act of reiteration of an idea by the mind, must take place, before objects of perception can become part of our knowledge, will, we think, be obvious, from a consideration of the following facts.—When, for example, we are in a crowded room, or in the fields, numerous sounds enter the ear,—thousands of images enter into and impress the eye, yet not one of these becomes part of our knowledge till it is *thought of*;—that is, till the idea suggested by the sensation, has not only been perceived, but reiterated by the mind. This will appear to many so plain, that any farther illustration of the fact may be deemed useless. But experience, has shewn, that the illustration of this important process in education, is not only expedient, but is really necessary; as the overlooking of this simple principle has often been the cause of great inconsistencies on the part of teachers. We shall therefore endeavour to exhibit the working of the principle in various forms, that it may be fully appreciated when we come to apply it.

Let us then suppose two children taken silently through a museum of curiosities, the one active and lively, the other dull and listless. It would be found on retiring, that the former would be able to give an account of many things which he saw, and that the other would remember little or nothing. In this case, all the objects in the exhibition were seen by both; and the question arises, "Why does the knowledge of the one, so much exceed that of the other?" The reason is, that the mind of the one was active, while the mind of the other was in a great measure inactive. Both *saw* the objects; but only one *looked at* them. The one actively employed his mind—fixed his eye on an object, and thought of it; that is, he reiterated the ideas it suggested to him, whether as to form, or colour, or movement, and by doing so, the ideas thus reiterated, were effectively received, and given over to the keeping of the memory. The other child saw the whole; they were perhaps objects of perception; but he allowed his sensations to die away as they were received; and his mind was left to wander, or to remain under the dreamy influence of a mere passive and evanescent train of thought. His "attention" was not arrested;—his mind was not actively engaged on any of the articles he saw; in other words, the ideas which they suggested were not [Pg 58]

"reiterated."[4]

Now, that it was the want of this mental reiteration which was the cause, and the only cause, why this very usual means of acquiring knowledge failed to communicate it, may be proved we think by a very simple experiment. For if we shall suppose that the child who was obtaining no knowledge by means of the various curiosities around him, had been asked at the time a question respecting any of them,—a stuffed dog, for example,—his attention would have been arrested, and his mind would have been roused to active thought. The words, "What is that?" from his teacher, or companion, would have made him look at it, and reiterate the ideas of its form and colour, so far as to enable him to give an answer. And if he does so, it will be found afterwards, on leaving the place, that although he might have remained unconscious of the presence of all the other objects in the museum, he will remember the stuffed dog, merely because, by the question, the idea it suggested was taken up, and reiterated by the mind; while the sensations [Pg 59] caused by all the rest, were allowed to pass away.

There is another circumstance of daily occurrence, which adds to the evidence that it is this principle which we have called "reiteration," which forms the chief, if not the only avenue, by which ideas find access to the mind; and it is this:—That when at any time we bring to recollection some former circumstance of life, however remote, or when we recall any part of our former knowledge or experience, it comes up to the mind, accompanied with the perfect consciousness, that, at the time we are thinking of, this act of reiteration had taken place upon it; that we most assuredly have thought of it before. We are not more certain that it occupies our thoughts now, than we are that it did so when it occurred;—that the operation of which we are at present speaking, did actually then take place; and that it was by our doing so then, that it is remembered now. This circumstance, when duly considered, is of itself, we think, a sufficient proof, that no part of our knowledge,—not a single idea,—can be acquired, or retained on the memory by any other process, than by this act of reiteration.

Hence then it is plain, that all the knowledge which we receive by observation, without the use of language, is received and retained on the memory by the operation of this principle; and we will now proceed to shew, that the same process must also take place, when our ideas are received by means of *words*, whether these be spoken or read.

It is of great importance for us to remember, that the only legitimate use of words is to convey ideas; and that Nature rigidly refuses to acknowledge any other use to which they may be put. Hence it is, that in conversation, we are quite unconscious of the words which our friend uses in communicating his ideas. Nature impels us to lay hold of the ideas alone; and in proof of this we find, that we have only to attempt to concentrate our attention upon the *words* he uses, and then [Pg 60] we are sure to lose sight of the *ideas* which the words were intended to convey. Hence it is, that our opinion of the style, and the language, and the manner of a speaker, when the subject itself is not familiar, are formed more by indirect impressions, than by direct attention to these things while he speaks; and oftener by reflection afterwards, than by any critical observation during the time. The reason of this, we may remark once for all, is, that what the mind reiterates it remembers,—but nothing more. If during the hearing, it reiterates the ideas, it will then remember the ideas; but if it reiterates the words without the ideas, it will remember nothing but words. Those therefore who sow words in the minds of the young, hoping afterwards to reap ideas, are as inconsistent as those who seek to "gather grapes of thorns, or figs of thistles."[5]

Knowledge is received by the use of words in two ways,—either by oral speech, or by written language; but in both cases, the reception of the ideas is still governed by reiteration. We shall endeavour to examine the operation in both cases.

Let us suppose that a teacher announces to a class of young children, that "Cain killed his brother Abel,"—and then examines the state of each child's mind in regard to it. All of them heard the words, but some only perhaps are now in possession of the truth communicated. Those who are so, followed the teacher in his announcement, not so much in reiterating the words, as in reiterating the idea,—the truth itself; and therefore it is, that they are now acquainted with the fact. Of those who heard, but have failed to add this truth to their stock of knowledge, there may be two classes;—those who attended to what was said, but failed to interpret the words; and those whose attention was not excited at all. Those who failed to interpret the words, or to [Pg 61] extract the idea from them, reiterated the *words* to themselves, and would perhaps be able to repeat the words again, but they do so in the same manner that a person reads or repeats words in an unknown tongue. The idea,—the truth,—is not yet perceived, and therefore cannot be remembered. The others who remember nothing, have reiterated nothing; their minds remained inactive. They also heard the words, but they failed to listen to them; in the same way as they often see objects, but do not look at them. Here it is evident that every child who reiterated the idea in his own mind, is in possession of the fact communicated; and all who did not do so, even although they reiterated the words, have no addition made to their knowledge; which shews that it is only by this act of the reiteration of the ideas, that any portion of our knowledge is ever acquired.

That this is a correct exhibition of the principle, and a legitimate inference from the phenomena, may be still farther proved by an experiment similar to one formerly recommended. Let the teacher, in the middle of a story, ask some of the inattentive pupils a question respecting some of the persons or things he is speaking about, and force the reiteration of that part of the narrative in the child's mind by getting an answer, and it will be found at the close, that although he may remember nothing else of all that he heard, yet he will most perfectly remember that part about which he was questioned, and respecting which he returned an answer.

The same thing may be ascertained by our own experience, in hearing a lecture or sermon, or even in conversation with a friend. In these cases, as long as our attention is kept up,—that is, as long as we continue to reiterate the ideas that we hear,—we may remember them; but when our minds flag, or wander; in other words, when we cease to reiterate the ideas of the speaker, the sounds enter our ear, but the matter is gone. All that has been said during that period of [Pg 62] inattention has been lost; it never has formed, and never can form, part of our knowledge.

Thus we see, that in the act of hearing oral communications, the principle of reiteration of the ideas is obviously necessary for the acquiring of knowledge; and we shall now shew, that it is equally necessary in the act of reading.

Many persons must have witnessed children reading distinctly, and fluently perhaps, who yet were not made one whit wiser by what they read. The act of reading was correctly performed, and yet there was no accession to their knowledge. The cause of this is easily explained. The *ideas* conveyed by the words have not been reiterated by the mind,—perhaps they were never perceived. For as long as the act of reading is difficult, the words undergo this process first, and the ideas must be gleaned afterwards. Hence it is, that children, when hurried from lesson to lesson before they can read them so easily as to perceive and reiterate the ideas while reading, acquire the habit of decyphering the words alone, and the eye from practice reads mechanically, while the mind at the moment is usually wandering, or is engaged in attending to something else. Nature, as we have before shewed in the act of hearing, does not intend that the mind should pay attention both to the words and the ideas at the same time; and reading being only an artificial substitute for hearing, is made subject to the same law. It is the *ideas* that Nature induces us to grapple with; and the reading of words like the hearing of language, is merely the means employed to get at them. Hence the necessity of children being taught to read fluently, and with perfect ease, before they leave the school; and the neglect of this is the reason why so many after leaving school, derive so little instruction from the use of books. Of these individuals, experience shews, that many, who on leaving school could not collect ideas by their mode of mechanical [Pg 63] reading, yet persevere, and at last teach themselves by long practice to understand what they read; while there are not a few who, in similar circumstances, become discouraged, abandon the practice of reading, and soon forget the art altogether.

Of the correctness of these facts, every one may be convinced, by recollecting what must often have taken place with himself. When at any time the mind is exhausted while reading, we continue to read on, page after page, and when we have finished, we find, that not a single truth has made its way to the memory. Now this did not arise from any difficulty in comprehending the ideas in the book, because it does not make much difference whether the subject has been simple or otherwise; neither did it arise from the want of all mental activity, for the mind was so much engaged as to read every word and every letter in the pages upon which we were occupied. But it arose entirely from the want of that principle of which we are here speaking. The words were read mechanically, and the ideas were either not thought of, or at least they were not reiterated by the mind, and therefore it is that they are lost,—and no effort can ever again recall them. The proof of the accuracy of these views will still be found in the circumstance, that if, while the person is reading, this act of the reiteration of some one or more of the ideas be in any way forced upon him, *these* ideas thus reiterated will afterwards be remembered, although all the others are lost.

Here then we have arrived at a principle connected with the acquisition of knowledge, by attending to which education may be made most efficient for that purpose; but without which, education must remain a mere mechanical routine of barren exercises. No idea, no truth, we have seen, can ever form part of our knowledge, till it has undergone this particular mental process, which we have called "reiteration." If the idea, or truth, intended to be communicated, be [Pg 64] reiterated by the mind,—thought over again,—it will then be remembered:—but if it be not reiterated by the mind, it never can. It is also worthy of remark, that the tenacity with which the memory keeps hold of any idea or truth, depends greatly upon the vigour of the mind at the time, and still more perhaps upon the frequency of its reiteration. If a child, however languid, is forced to this act of reiteration of an idea but once, it will be remembered for a longer or a shorter time; but if his mind be vigorous and lively, and more especially if he can be made *repeatedly* to reiterate the same idea in his mind at intervals, he will on that account, retain it much more tenaciously, and will have it at the command of the will more readily. Hence the vividness with which the scenes and the circumstances of youth arise upon the mind, and the tenacity with which the memory holds them. These scenes were of daily occurrence; and the small number of remarkable circumstances connected with childhood and youth having few rivals to compete with them in attracting the attention, were witnessed frequently with all the vigour and liveliness of the youthful mind, as yet unburdened with care. They were of course frequently subjected to observation, and as frequently reiterated by the mind, and have on these accounts ever since been vividly pictured by the imagination, and continue familiar to the memory. It also accounts for another circumstance of common occurrence. For when, even in early infancy, any event happened which made a deeper impression upon the mind than usual, that simple circumstance will generally outlive all its neighbours, and will take precedence in point of distinct recollection to the close of life. The reason of this is, not only the deep impression it made upon the mind at the moment, but principally because it had so strongly excited the feelings, that it was oftener thought of then and afterwards;—in other words, this act of reiteration occurred more frequently [Pg 65] with respect to it than the others, and therefore it is now better remembered.

This is a principle then of which the Educationist should take advantage. For if Nature invariably communicates knowledge by inducing her pupils to exercise their own minds on the

subject taught, it is plain that the teacher should follow the same plan. His pupils cannot remain mentally inactive, and yet learn; neither can the mere routine of verbal exercises either cultivate the mind or increase knowledge. These are but the husks of education, which may tantalize and weaken, but which can never satisfy the cravings of the young mind for information. Their mental food must be of a perfectly different kind, consisting of *ideas*, and not of *words*; and these ideas they must receive and concoct by the active use of their own powers. The teacher must no doubt select the food for his pupils, and prepare it for their reception, by breaking it down into morsels, suited to their capacities. But this is all. They must eat and digest it for themselves. The pupil must think over in his own mind, and for himself, all that he is either to know or remember. The ideas read or heard must be reiterated by himself,—thought over again,—if he is ever to profit by them. Without this, no care or pains on the part of the teacher, no exertion on the part of the pupil, will be of any avail. All the knowledge that he seems to acquire in any other way is repudiated by Nature; and however plausible the exercise may appear, it will ultimately be found fruitless and vain.

**FOOTNOTES:**

[3] Note B.

[4] Note C.

[5] Note D.

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## CHAP. V.

### *On the Acquisition of Knowledge by the Principle of Individuation.*

Nature, as we have seen, has rendered it imperative that the act of reiteration should be performed upon every idea before it can have an entrance into the mind, or be retained by the [Pg 66] memory; but as the individual cannot reiterate, or think over, all the ideas suggested to him by the innumerable objects of sensation with which he is surrounded, it next becomes a matter of importance to ascertain the means employed by Nature for enabling her pupils to receive and retain the greatest number of ideas, so that they shall ever afterwards remain at the command of the will. This she accomplishes by the operation of the three other principles to which we have adverted; namely, "Individuation," or "Abstraction," "Grouping," or "Association," and "Classification," or "Analysis."—We shall in this chapter attend to the principle of "Individuation," and endeavour to trace its nature and uses in the acquisition of knowledge by the young.

The first thing in an infant that will be remarked by a close observer of Nature is, that while adding to its knowledge by observation, it always confines its attention to one thing at a time, till it has examined it. Before the period when this principle becomes conspicuous in an infant, the eye, and the other senses are in a great measure inactive, so far as the mind is concerned; and the first indication of the senses really ministering to the mind is the eye chusing an object, and the infant examining that object by itself, without allowing its attention to be distracted by any thing else.

This operation takes place as soon as an infant is capable of observation. It fixes its eye upon an object, generally one that is new to it, and it continues to look upon it till it has collected all the information that this object can give, or which the limited capacity of the infant will enable it to receive. Hence with stationary objects this information is soon acquired; but with moveable objects, or toys, or things which are capable of varying, or multiplying the ideas received by the child, the look is more intense, and the attention is sustained without fatigue for a longer time. [Pg 67] Till this information has been received, the child continues to look on; and if the object be removed, the eye still follows it with interest, and gives it up at last with reluctance. That by this concentration of its mind upon one object, the infant is adding to its knowledge, appears evident from the fact, that objects which have already communicated their stock of information, and have become familiar, are less heeded than those that are new or uncommon. Every new thing excites the curiosity of the child, who is not content till that curiosity be gratified. This has been called "the love of novelty;"—but it is not the love of novelty in the very questionable sense in which many understand that term. On the contrary, it is obviously a wise provision of Nature, suited to the capacity and circumstances of children, which is to be taken advantage of, for conveying such crumbs and morsels of knowledge as their limited powers are able to receive; and which should never be abused, by presenting to them an unceasing whirl of names and objects,—a process which fatigues the mind, and leaves them without any specific information. It is the same principle, and is to be considered in the same light, as that which induces the philosopher to confine himself to the investigation of one phenomenon till he understands it. The information which the child is capable of receiving from each of the impressions then made is no doubt small;

but it is still information—knowledge.—This is what he is seeking; and, at this stage of his progress, it is only acquired by the concentration of the powers of the mind upon one thing at a time.

The effect of this principle in the infant is worthy of remark.—While the pupil remains under the teaching of Nature, there is no confusion,—no hurry,—no failure. The tasks which she prescribes for him are never oppressive, and are constantly performed with ease and with pleasure.—Although there be no selection made by the parent or teacher for the child to exercise [Pg 68] his faculties upon, yet he instinctively selects for himself, without hesitation, and without mistake. All the objects in a room or in a landscape are before him: yet he is never oppressed by their number, nor bewildered by their variety.—His mind is always at ease.—He chooses for himself; but he never selects more for his special observation at one time than he can conveniently attend to. When the objects are new, his attention is restricted to one till it be known; and then, but not till then, as we shall immediately see, he is able, and delights to employ himself in grouping it with others.

In early infancy this attention to one object is protracted and slow, till he gradually acquires sufficient energy of mind by practice.—Every one must have observed how slowly the eye of an infant of two or three months old moves after an object, in comparison with one of ten.—But even in the latter case, when the glance is lively and rapid, the same principle of individuation continues to operate. The information from an unknown object must still be received alone, and without distraction, although by that time the child is capable of receiving it more quickly. He is not now satisfied with viewing an object on one side, but he must view it on all sides. He endeavours by various means to acquire every one of the ideas which it is capable of communicating. His new toy is viewed with delight and wonder; and his eye by exercise can now scan in a moment its different parts.—But this is not enough; he has now learned to make use of his other senses, and he employs them also, for the purpose of becoming better acquainted with the object which he is contemplating. His toy is seized, mouthed, handled, turned, looked at on all sides, till all the information it can communicate has been received;—and then only is it cast aside for something else, which is in its turn to add to his stock of knowledge.

The circumstance to which we would especially call attention at present is, the singleness of [Pg 69] thought exercised upon the object, during the time that the child is amused by it.—He attends to nothing else, and he will look at nothing else; and were his attention forced from it for a moment, this is evidently done unwillingly; and, when allowed, it immediately returns to the object. It is also worthy of notice, that if, while he is so engaged, we attempt to teach him something else, or in other words, to induce him to divide his attention upon some other new object, the distraction of his mind is at once apparent; we perceive that it is unnatural; and we find by experience that he does not profit by either. Now, from these indications it must be evident, that any interference with this principle of individuation in teaching any thing for the first time, must always be hurtful:—on the contrary, by attending to the principle, and acting upon it in the training of the young, it must be productive of the happiest effects.—While acted upon, under the guidance of Nature, its efficiency and power are astonishing. It is by means of this principle, that the infant mind, with all its imbecility and want of developement, acquires and retains more real knowledge in the course of a few months, than is sometimes received at school afterwards during as many years.—Few things are more cheering in prospect than the knowledge of this fact; for what may we not expect from the *man*, when his education while a *child* shall have been improved, and approximated to that of Nature!

The operation of the principle of individuation, is not confined to the infant, but continues to maintain its place during all the after stages of life, whenever any thing new and uncommon is presented as an object of knowledge. Every thing is new to the infant, and therefore this principle is more conspicuous during the early stages of education.—But it is still equally necessary for the child or the youth in similar circumstances; and Nature compels him, as it were, still to [Pg 70] concentrate the powers of his mind upon every new object, till he has received and become familiar with the information it is calculated to furnish.—Every one must have observed the intensity with which a child examines an object which he has never seen before, and the anxiety which he evinces to know all about it.—It requires a considerable effort on his own part, and still greater on the part of others, to detach his mind from the object, till it has surrendered the full amount of information which the young enquirer is seeking. The boy with his new drum will attend to nothing else if he can help it, as long as he has any thing to learn concerning it, and the noises it is capable of producing.—And even when he has tired himself with beating it, he is not satisfied till he has explored its contents, to find out the cause which has created the sounds. The girl with her doll, in the same way, will voluntarily think of nothing else, as long as it can provide her with mental exercise; that is, as long as it can add something new to her present stock of knowledge. And it is here worthy of remark, that the apparent exception in this case, arising from the greater length of time that a doll and a few other similar toys will amuse a child, is in reality a striking confirmation, and illustration of the principle of which we are speaking.—Such toys amuse longer, because it is longer before the variety of which they are capable is exhausted.—The doll is fondled, and scolded, and cradled, and dressed, and undressed in so many different ways, that the craving for new ideas continues for a long period to be amply gratified;—but the effect would be quite different, were the very same doll placed where it could only be looked at. Every new movement with the toy is employed by Nature, for the cultivation of the mental powers, by reiterating the ideas thus imparted, and on which the imagination delights to dwell; and also in receiving a knowledge of individual objects and ideas, which, when once known, are to form the elements of future groupings, and of an endless variety of information. [Pg 71]

It is here of importance to recollect, that almost all the information received by children, is of a sensible kind. They can form little or no idea of abstract truths. The mind and the memory must be stored with sensible objects,—first individually, and then by grouping,—before the child can arrive at a capacity for abstraction. Nature's first object, therefore, is to store the memory and imagination of the young with the names and images of things, which, as we have seen, are acquired individually, and, when once known, are remembered for future use. But those things which they have not yet seen, or felt, or heard, or tasted, are totally beyond their conception, and cannot be of any service, either in grouping, or classification.—Hence the great importance of allowing the young mind to act freely in acquiring new ideas by this principle of individuation; as without this, all the lessons into which such ideas shall afterward be introduced, must be in a great measure lost. Even adults can form no idea of an unknown object, except by compounding it of something that they already know. And this is at least equally the case with children; who, till they can group and compare objects which they have seen, can realize no idea of any thing, however simple, that has not previously been subjected to the senses.—Hence, therefore, the importance at this period of a child's education, of confining the attention chiefly to sensible objects, and of not confounding his faculties, by too early an introduction of abstract ideas.

Here then we have been able to detect the method by which Nature selects, and enables her pupils to prepare the materials of which their future knowledge is to be compounded. These materials are the ideas of sensible objects, and their properties and uses; which must be gathered and stored one by one. By inducing them to attempt to seize even two at a time, they will most probably lose both, and their powers of collecting and storing will, by the same attempt, [Pg 72] be injured and weakened. It is by means of this principle of individuation, that, with the most intense craving for information, and while placed among innumerable objects calculated to gratify it, the infant and the child remain perfectly collected, without the slightest appearance of distraction of mind, or confusion of ideas. With his thirst of knowledge ardent and constant, it enables him with the greatest delight to add hourly to his stores of knowledge, without difficulty, without irritation, and without fatigue.

The application of these truths to the business of education, we shall attend to in its proper place; in the meantime we may remark, of how much importance it is, that all knowledge communicated to the young be simple, and that for some time it consist chiefly of sensible objects, and their qualities;—objects which they either know, or can have access to. Abstract subjects are not suited for children, till they can group, and classify, and compare the sensible objects with which they are already acquainted. The aim of the teacher, therefore, ought to be, strictly to follow Nature in this early stage of her operations, and to furnish food for his pupils, of the proper kind, and in proper proportions;—keeping the thinking powers constantly in healthful exercise, by giving as many ideas as the mind can reiterate without fatigue; but carefully avoiding all hurry or force, seeing that the powers of the mind are greatly weakened and injured by a multiplicity of objects, particularly when they are presented so rapidly, that the thoughts have not time to settle upon them, nor the mind to reiterate the ideas which they suggest.

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## CHAP. VI.

### *On the Application of Knowledge by the Principle of Association, or Grouping.*

Another principle which exhibits itself in the acquisition of knowledge by Nature's pupils, is that of "grouping," or associating objects together, after they are individually known. A child, or [Pg 73] even an infant, who is frightened, or alarmed, or who suffers any severe injury, remembers the several circumstances, and has the place, the persons, and the things connected with the event, all associated together, and grouped into one scene or picture on the memory. These objects may have been numerous; but by the operation of this principle, they have all been apprehended, and united so powerfully with each other, that no future effort of the child can either separate or obliterate any portion of them; and so comprehensive, that the recollection of any one of the circumstances instantly recalls all the others.

These groupings in the mind of a child, formed chiefly by means of the imagination, are almost wholly compounded of sensible objects; and the only necessary prerequisite for their formation appears to be a knowledge of the individual elements of which they are to be composed. If an unknown object be presented to the mind in connection with the others that are known, it is generally excluded, and the things previously known retained. For example, in the case supposed above, of an accident occurring to a child, there would be thousands of objects present, and all cognisable by the senses; but not one of all these that were unknown, that is, that had not previously undergone the process of individuation, is found to form part of the remembered group.

There is another circumstance connected with the operation of this principle in the young, which is of importance. Almost the whole of a child's knowledge is composed of these groupings. Before the developement of the reasoning powers, by which the individual is enabled to *classify* the elements of his knowledge, there is no way of remembering these elements in connection with each other, except by this principle. If, therefore, we change the order or relative position of the elements or objects which compose the scene, or group, we draw the attention of the pupil [Pg 74] altogether from the former, and create another which is entirely new;—in the same way as the transposition of the figures in any sum, forms another of an entirely different amount. The drawing-room, for example, is seen by the children of the family with the fire-place, the cabinet, the sofas, the tables, and other stationary ornaments, in certain relative positions, and this grouping of those objects is to them in reality all that they know of the room. Any material change in shifting these objects to other places in the apartment, would, to the *parent*, whose judgment is ripened, produce feelings comparatively slight; but, to the younger branches of the family who group, but cannot as yet classify, it would appear like the complete annihilation of the former apartment. The different arrangement of a few of the articles only, would to them create another, and an entirely different room.

This leads us to observe another circumstance connected with the operation of this principle, in the instruction of the young, which is the remarkable fact, that, by making the child familiar with a very few primitive elements, a parent or teacher may communicate an almost infinite variety of groupings, or stories, for cultivating the mind, and increasing the knowledge of his pupil. Hence it is, that hundreds of agreeable and useful little histories have been composed for children, with no other machinery than a mamma and her child, and the occasional introduction of a doll or a dog, a cat or a canary bird. To the child, there is in these numerous groupings no appearance of sameness, nor want of variety; and although so much circumscribed in their original elements, they never fail to amuse and delight.

The most important circumstance, however, connected with the working of this principle in the education of the young, appears to be the necessity of a previous familiarity with the individual objects, before the child is called upon to group them. If this has been attended to, the grouping [Pg 75] of these into any combination will be easy and pleasant;—but if his attention be called from the group, to examine exclusively even but one of its elements, the operation is checked, the mind becomes confused, its powers are weakened, and the grouping has again to commence under serious disadvantages.

To illustrate this point, let us suppose a child introduced to the bustle and sports of a common fair. Here he sees thousands both of familiar and strange objects, all of which are calculated to excite his mind to increased attention; and yet the child, while greatly amused, is still perfectly at his ease. There is not the slightest indication of his being incommoded by the numerous objects about him; no confusion of ideas, no distraction of mind, no mental distress of any kind; but, on the contrary, in the midst of so much to see and to learn, the young looker-on is not only at his ease, but appears to be delighted. The reason of this is, that he is not by any external force compelled to attend to *all* that he sees; and Nature within directs him to attend to no more than he is able to group, or reiterate in his thoughts. We shall endeavour to examine this condition of the child's mind in such circumstances a little more particularly.

The child in the circumstances supposed, must either be a spectator in general, or an examiner in particular; in other words, he must either employ himself with the principle of combination or grouping, or with the principle of individuation,—but he never attempts to employ himself with both at the same time. If he amuses himself as an observer in general, he is engaged in grouping objects which are already familiar to him; but while he is so engaged, he never directs his attention to any one unknown object for the purpose of examining it for the first time by itself. He passes over all the minute and unknown objects with a glance, and attends only to the grouping [Pg 76] or associating of those which are already familiar. Nature induces him, while thus employed, to pass by all these minute and unknown objects; because, if he were to do otherwise, his observation in general would instantly be recalled, and his whole attention would be monopolized by the object which he had resolved to examine, to the exclusion of every other for the time. This, however, is not what he seeks; and he employs himself entirely in the grouping of things which are already known. His mind is left at ease, and in the possession of all its powers; he looks only at those things which please him; and he passes over all the others without effort or difficulty.

But if the boy shall come to something strange and new, which he is desirous of studying more closely, he immediately becomes an examiner in particular; but, at the same moment, he ceases to be an observer in general. The extended business of the fair, and the several groupings of which it is composed, are lost sight of for the moment;—the principle of individuation begins to act, and the operation of the principle of association, or grouping, is at the same moment brought to a stand. The two are incompatible, and cannot act together; and therefore Nature never allows the one to interfere with the other.

To shew the evil effects of overlooking this important law of Nature in the education of a child, we have only to attend to the painful results which would be the consequence of acting contrary to it, even in the vigorous mind of an adult. Let us for this purpose suppose a person of a powerful understanding, and a capacious mind, ushered for the first time, and for only five minutes into a crowded apartment in some eastern caravansary, or eastern bazaar, in which every thing to him was new and strange; and let us also suppose that it was imperatively demanded of him, that he should, in that short space of time, make himself acquainted with all that was going on, and be able, on his retiring, minutely to describe all that he saw. The first [Pg 77] moment he entered, and the first strange object that caught his eye, would convince him that *the*

*thing was impossible*. If, without such a demand, he had been introduced into such a place, and had seen various groups of strange persons differently employed, each engaged in a manner altogether new to him, and the nature of which was wholly unknown, he might look on with perfect composure, and considerable amusement, because he could attend, like the boy in the fair, either to the general mass, to isolated groups, or to individual things. He would in that case attend to no more than he was able to understand; and would placidly allow the other parts of the scene to pass without any particular attention. But the imperative injunction here supposed,—this pressure from without,—this artificial and unnatural demand upon him,—entirely alters the case. If he even attempted to make himself master of all the particulars of the scene in a circumscribed portion of time, he would find himself bewildered and confounded. The very attempt to individualize and to group so many various objects at the same moment, within such a limited period, would be enough to prostrate all the powers of his mind. He might perhaps be able to observe the persons and their costume, because varieties of persons and dresses are daily and constantly objects of observation, and are grouped without difficulty; but of their several employments, of which he was previously ignorant, he could know nothing, and on retiring, he would neither be able to remember nor to describe them. In such an experiment, it would be found, that the more anxious he was to perfect his task and to answer the demand, in the same proportion would he find himself harassed and distressed, and the powers of his mind overstretched and weakened. And if this would be the result of confounding the principles of individuation and grouping in an adult,—a person of good understanding, and of vigorous mind,— [Pg 78] how much more hurtful must such a task be, when demanded from children or youths of ordinary capacity, during their attendance at school!

Few we believe will doubt the general accuracy of the above results in the cases supposed;—but some may perhaps question, whether they really do arise from the interference of these two antagonist principles during the experiment. To shew that this is the real cause of the distress felt, and the weakness and prostration of mind produced during it, we have only to institute another experiment which is exactly parallel. Let us suppose the same person, and for the same limited period, ushered into the traveller's room in a well frequented hotel, and let us also suppose, that the very same demand is made imperative, that he shall observe, and again detail when he retires, all that he sees. Let us also suppose, that the number of persons here is equally great, and that their employments are all equally diversified, but that each is familiar to him; and we will at once see that the difficulty of the task is really as nothing. A child could accomplish it. His eye would be able to group the whole in an instant, without effort, and without fatigue. If he saw one party at supper, another at tea, another group at cards, and others amusing themselves at draughts and backgammon; one minute instead of five, would be quite enough to make him master of the whole. On retiring, he would be able to tell the employment of every group in the room; and if any of his acquaintances had made part of the number, he would be able to tell who they were, where they were sitting, and how they were occupied. In doing all this he would find no difficulty; and yet the knowledge he has received is entirely new, and so extensive, that it would take at least ten fold more time to rehearse it, than it took to acquire it. The entire scene also would be permanently imprinted by the imagination upon the memory; and the whole, or any [Pg 79] part of it, could be recalled, and reviewed, and rehearsed, at any future period. Here then are two cases, precisely similar in their nature, and undertaken by the very same person, where the results are widely different; and we now see, that the difference arises entirely from the principle of individuation having prepared the way in the one case, while it was not allowed to operate in the other.

From these circumstances taken together, we perceive, that the grouping of objects, when once they are individually familiar, is never a difficult task, but is rather one of gratification and pleasure;—and we also are taught, that the amount of knowledge thus pleasantly communicated to a child may be most extensive and valuable, while the materials necessary for the purpose, being comparatively few, may be previously rendered familiar with very little exertion. It is the confounding of these two principles in the communication of knowledge, that makes learning appear so forbidding to the young, and prevents that cultivation of the mental powers by their exercises which these would otherwise infallibly produce. By keeping each in its proper place, a child will soon acquire a thorough knowledge of the few elements necessary for the purpose; and these, when acquired, may be grouped by the teacher into thousands of forms, for extending the knowledge, and for invigorating the mind of his delighted pupil.

The benevolence and wisdom of this beautiful arrangement in the educational process of Nature, are truly wonderful; and in proportion as it is so, every deviation from it on our parts will be attended with disappointment and evil. If all our ideas were to be acquired and retained by the principle of individuation alone, the memory being without help or resting place, would soon become so overpowered by their number, that our knowledge would be greatly circumscribed, and its use impeded. Of the benefits arising from attention to the principle we have many apt [Pg 80] illustrations in ordinary life, among which the various groupings of the ten numeral figures into sums of any amount, and the forming of so many thousands of words by a different arrangement of the letters of the alphabet, are familiar examples. When a child knows the ten numerals, he requires no more teaching to ascertain the precise amount of any one number among all the millions which these figures can represent. The value of such an acquirement can only be appreciated by considering the labour it would cost a child to gain a knowledge of all these sums individually, and the overwhelming burden laid upon his memory if each of the millions of sums had to be remembered by a separate character. By the knowledge and various groupings of only ten such characters, the whole of this mighty burden is removed.

In the art of writing, the same principle is brought into operation with complete success, by the

combination, or various groupings of the twenty-six letters of the common Roman alphabet in the formation of words. The value of this adaptation of the principle will be obvious, if we shall suppose, that a person who is acquainted with all the modern European languages, had been compelled to discriminate, and continue to remember, a distinct arbitrary mark or character for the many thousands of words contained in each. We may not be warranted, perhaps, to say that such a task would be impossible; but that it would be inconceivably burdensome can admit of no doubt. We have, indeed, in the writings of the Chinese, although it is but one language, a living monument of the evil effects of the neglect of this principle in literature, and the unceasing inconveniences which daily arise from that empire continuing to persevere in it. There is comparatively but little combination of characters in their words, and the consequences are remarkable. In that extensive empire, the highest rewards, and the chief posts of honour and [Pg 81] emolument, are held out to those who are most learned, whatever be their rank or their station; and yet, amidst a population immersed in poverty and wretchedness, not one person in a thousand can master even one of their books; and not one in ten thousand of those who profess to read, is able to peruse them all. The reason of this simply is, the neglect of this natural principle of grouping letters, or the signs of sounds, in their written language. With us, the elements of all the words in all the European languages are only twenty-six; and the child who has once mastered the combination of these, in any one of our books, has the whole of our literature at his command.

The application of this principle to the elements of general knowledge is equally necessary, as its application to written language. The difficulty of remembering the many thousands of unconnected characters in Chinese literature, is an exact emblem of what will always be the case with children in respect to their general knowledge, when this principle of association, or grouping, is neglected. Adults acquire and retain a large portion of *their* knowledge, as we shall afterwards see, by the principle of classification and analysis; but *children* are not as yet capable of this; and they must receive their knowledge by the grouping of a few simple elements previously known, or they will not be able to receive and retain knowledge at all. The amount of this knowledge also, it should be kept in mind, is not at all in proportion to the number or the variety of the elements of which that knowledge is composed. We have formerly alluded to this, and it may be farther illustrated by a circumstance of daily occurrence. A seaman when he observes a vessel at a distance knows her class and character in an instant, whether she be a sloop or a brig, a schooner or a ship, and he forms an instantaneous idea of all her parts grouped into a whole. His memory, instead of being harassed in remembering the shape, and place, and [Pg 82] position of each of its several parts, is relieved of the whole by the operation of this principle of association. The whole rigging, about which his mind is occupied, is composed of only *three* elements,—ropes, and spars, and sails,—with each of which he has long ago made himself familiar. All the remaining parts of this kind of knowledge are a mere matter of grouping. By previously observing the varied arrangement of the spars, and ropes, and sails, on the several masts of the different kinds of vessels, he has already grouped them into one whole, and each is remembered by itself without effort, and without mistake. They are retained, as it were, painted by the imagination upon the memory, and may at any after period be recalled and reviewed at pleasure. Hence the sight of a vessel in the distance calls up the former pictures to the mind, and enables the practised eye of the mariner to decide at once as to the kind and character of what he so imperfectly sees.—This helps also to explain the reason why children are so gratified with pictures when presented to the eye; and why they are best pleased when the figures are most simple and distinct, and particularly, when the objects grouped in the picture have previously been familiar. Pictures are indeed a pretty close imitation of Nature in this part of her work; and they are defective chiefly on account of their want of *motion* and *continuity*. These last are two great and inimitable characteristics in all the groupings painted upon the memory by the imagination.

From all this it is obvious, that there is an essential difference between a child's acquiring the knowledge of things individually, and acquiring a knowledge of their several associations. The two must never, if possible, be confounded with each other. When they are kept distinct in the education of a child, he has an evident pleasure in attending to either; but as soon as they are allowed to interfere, and more especially when they are systematically blended together in the [Pg 83] same exercise, he experiences confusion, irritation, and fatigue. There is no necessity, however, for this ever being the case. All that is required is, that the few individual elements that are to be grouped or associated in a lesson, whether they be objects or ideas, shall previously be made familiar to the pupil. These, when once known, may be brought before the mind of the child in any variety of order or form, and will be received readily and pleasantly, and will be retained by the memory without confusion, and without effort. By attention to these two principles, keeping each in its proper place, and bringing each to aid and uphold the other in its proper order, it will be found, that a child may be taught more real knowledge in one week, than is often communicated in other circumstances in the course of a year.

## CHAP. VII.

### *On the Acquisition of Knowledge by the Principle of Analysis, or Classification.*

There is yet another principle brought into operation by Nature to enable her pupils to receive, to retain, and to make use of their knowledge. This is the principle of Classification, or Analysis. [6] The difference between this and the former principle described we think is sufficiently marked. The principle of Association, or Grouping, is carried on chiefly by means of the imagination, and begins to operate as soon as the mind is capable of imagining any thing; but the principle of Classification, or Analysis, is more intimately connected with the judgment. The consequence of this is, that it is but very partially called into action during the early stages of a [Pg 84] child's education, and is never able to operate with vigour, till the reasoning powers of the pupil begin to develope themselves.

The characteristic differences between the two principles, and their respective uses in education, may be illustrated by a circumstance of every-day occurrence. For example, a child who from infancy has been brought up in a house of several apartments, gets acquainted with each of the rooms by means of its contents. He has been in the habit of seeing the heavy pieces of furniture in each apartment in a certain place and order, and the room and its furniture, therefore, are identified together, and remain painted upon his imagination exactly as he has been in the habit of seeing them. In this case, the articles of furniture in the room are grouped, and not classified; and are remembered together, not on account of their nature and uses, but purely on account of their position, and their relative arrangement in the room. Most of our readers perhaps, will remember the strange feelings produced in their minds during some period of their childhood, when in the house of their infancy, some material alteration of this kind was effected in one or more of the rooms. A change in the position of a bed, or the abstraction or introduction of a chest of drawers, a wardrobe, or other bulky piece of furniture, causes in the mind of the child an effect much deeper, and more extensive, than in the adult. The former picture of the place never having been observed or contemplated in any other aspect, is painted by the imagination, and fixed upon his memory, by long continued familiarity. But by this change it is suddenly defaced; and the new group, partaking as it will do of some of the elements of the old, produces feelings which are strange and unaccountable, and entirely different from those of his parents, who have been in the habit of contemplating the room and its furniture more by the exercise of the judgment, than of the imagination; that is, more by their uses, than by their [Pg 85] appearance.

The cause of this strangeness of feeling in a child, arises from the predominance of the principle of grouping, over that of classification. He has as yet no knowledge of any of the apartments in the house, except what he has received by grouping their contents. When, therefore, their arrangement is materially altered, the reasoning powers not being as yet able to soften down the effect, the former apartment appears to the child as if it had ceased to exist. He can scarcely believe it to be the same. He never thinks of the *uses* of the articles in the apartment, but only of their *appearance*;—the first being an act of the judgment,—the latter of the imagination. In a similar manner he thinks of the kitchen and its furniture, not as a part of the household economy, but only in connection with the articles it contains. The dresser, the jack, and the tin covers, are never thought of in connection with their uses; but are identified with the kitchen, merely because they have always been seen there, and seen together. In like manner, the seats, the tables, and the ornaments of the drawing-room, are not connected in the child's mind because they are what are commonly called "drawing-room furniture," for that would imply a degree of reasoning of which he is as yet unacquainted; but they are remembered together, as they have always been observed in that particular place, and are now pictured on the mind, in the position in which they are usually beheld. Their particular locality in the room, and their relative position with respect to each other, are of far more importance in assisting the memory of the child, than any knowledge which he has as yet acquired of their respective uses.

Though a child had in this way gained an exact knowledge of every apartment in a house, it is obvious that there may not have been, during the whole process, a single act of the understanding. Many of the lower animals are capable of collecting all the knowledge he has [Pg 86] received; and even infants are, to a certain extent, in the daily habit of acquiring it. But the classification of objects, according to their nature and uses, is an operation of a perfectly different kind. Hence it is, that a change in the arrangement of the furniture of a room acts so slightly on the feelings of the adult, and so powerfully on the young. In the former, the reasoning powers neutralize the effect produced; to the latter, the change appears a complete revolution.

This principle of classification, though peculiar to the mature mind, is not restricted to any particular class of men. It is found to be universal, wherever the reasoning powers are capable of acting. It is no doubt conspicuous in civilized societies, because there it is more cultivated; but it is not confined to them. The savage is prompted to its exercise under the tuition of Nature. For example, the various articles and arts which he employs in hunting, are all regularly classified in his mind, and retained upon his memory, as perfectly distinct from those which he employs in fishing; and neither of these classes of articles are ever confounded with his implements and weapons of war. His hooks and lines, are as naturally classified in his mind with his nets and his canoe, as his club or his tomahawk is with his other weapons used in battle. It is by this means that Nature aids the memory in the retention of knowledge, and keeps all the successive

accumulations of the individual at the command of the will. When cultivated, as Nature designs that it should be, it forms an extensive cabinet in the mind, where every department of knowledge has its appropriate place; and which, when once systematically formed, can be furnished at leisure. When a new idea is acquired, it is immediately put in its place, and associated with others of the same kind; and when any portion of the knowledge which we have [Pg 87] accumulated is required, we know at once the particular place where it is to be found.

The benefits of this principle in the above form are extensively felt and acted upon in society, even where the principle itself is neither observed nor known; for in the family, in the work shop, and in the manufactory, it is of the last importance. It is upon this principle that a clergyman, for the help of his own memory, as well as for assisting the memory of his hearers, arranges the subject of his sermons in a classified form;—his text is the root of the classification. This he divides into heads, which form the first branch in this table; and these again he sometimes sub-divides into particulars, which form a second branch depending on the first, and all proceeding from the root,—the original text. Similar, but more extensive, is the plan adopted in the divisions and subdivisions of objects in the Sciences, such as Botany, Zoology, Chemistry, &c. in all of which the existence of this principle in Nature's educational process is acknowledged and exemplified. In these sciences, the efficiency of the principle in facilitating the reception of knowledge, and in assisting the memory in retaining it, and in putting it to use, is universally acknowledged.

But there is another form in which the same principle appears, not so obvious indeed, but it is one which is at least equally important in the education of the young. Nature always brings it into operation when a teacher, while communicating any series of *connected truths*, such as a portion of history or of science, gives more of the details than the mind of his pupil can receive, or his memory retain at one time. It may be desirable that the pupil should be made thoroughly acquainted with all the minute, as well as with the general circumstances of a history or a science; but if so, it must be done, not at once, but by degrees, or steps. It is usually done by repeating the course,—"revising," as it is called,—and that perhaps more than once;—going over [Pg 88] all the exercises again and again, till the several parts are perceived and remembered in their connection. In these "revisings," the mind forms an analytical table of the subject for itself, consisting of successive steps, formed by the successive courses. By the first course, or hearing, it is chiefly the great outlines of the subject that are perceived; and these form the first branch of a regular analytical table, which every succeeding course of reading or hearing tends to fill up. This will perhaps be best understood by an example.

Let us suppose that a young person sits down to read a history for the first time, and that he reads it with attention and care. When we examine the state of his mind after he has finished it, we find that, independently of what, by the principle of grouping, he has got in the form of episode, he has been able to retain only the great outlines of the history, and no more. He remembers perhaps of whose reign he has been reading, and the principal events that took place during it; but the intermediate and minor events, as connected with the history, he has not been able to remember. Nothing has been imparted by this first reading, but the great landmarks of the narrative. These are destined to form the first branch of a regular analytical table, of which the reign of the particular monarch is the root. This is the frame-work of the whole history of that period, however numerous the minor circumstances may be; and a second reading will only enlarge his knowledge of the circumstances under each of the heads. In other words, it will enable him to sub-divide them into more minute details or periods, and thus form a series of second branches from each. Now it is quite obvious, that when this analysis of the circumstances of that period is once formed in the mind, no new event connected with it can ever come to his knowledge without being classed with some of the others. It will be disposed of according to the relation which it bears to the parts already existing; and thus the whole texture will be regularly [Pg 89] framed, and every event will have its proper place, and be readily available for future use. One part may be filled up and finished before another; but the regular proportions of the whole remain undisturbed. The pupil has, by the original outline and its several branches, got a date and a place for every new fact which he may afterwards glean, either in his reading or his conversation; and he has a place in which to put it, where it can easily be found. When placed there, it is safe in the keeping of the memory, and will always afterwards be at the command of the will.

The connection of these circumstances, with the principle in education which we are at present endeavouring to illustrate, may not to some be very apparent. We shall therefore take another example from a circumstance similar to what occurs every day in ordinary life, and in which the principle, in the hands of Nature, is abundantly conspicuous. In the example we are here to give, she forms the several steps of the classification in a number of hearers by *once* reading a subject, very similar to what she does successively in the mind of one individual by *repeated* readings.

Let us then suppose a teacher with two or three hundred pupils, including every degree of mental capacity, from the youngest child who is able to understand, up to his own classical assistant; and that he reads to them the history of Joseph as given in the Book of Genesis. Let us also suppose, that they all give him their best attention, and that they all hear the narrative for the first time. Such an experiment, let it be observed, has its parallel every day, in the church, in the class room, and in the seminary; and similar effects to those we are about to describe invariably take place in each of them.

When the teacher has read and concluded this lengthened exercise, it will be found, that no two individuals among his hearers have acquired the same amount of knowledge. Some will have [Pg 90] received and retained more of the circumstances, and some less, but no two, strictly speaking,

will be alike. Those whose minds were incapable of connecting the several parts of the narrative into a whole, will retain what they have received in disjointed groups and patches,—episodes, as it were, in the narrative,—without being able very clearly to perceive its general design. This class, upon whom the principle of association chiefly has been at work, we leave out, and confine ourselves to the state of knowledge possessed by those who are in a greater or less degree capable of classification, and of taking some cognisance of the narrative as a connected whole.

Among this latter class, some will have retained no more than the bare outline of the history, interspersed with groupings, as in the younger children. They will remember little more than that Joseph was at first a boy in his father's house;—that he was afterwards a slave, and in prison;—and at last, a great man and a governor. Here the *whole history* is divided into three distinct heads, or eras,—the first branch of an analytical table of the whole story, from one or other of which all the other particulars, of whatever kind, must of necessity take their rise, and branch off in their natural order. An advanced class of the auditors will have retained some of the more obvious circumstances connected with *each of these three great divisions*, as well as the divisions themselves. They will not only remember that Joseph was a boy in his father's house, but they will also be able to remember the more prominent subdivisions of the narrative regarding him while there; such as his father's partiality, his dreams, and his brothers' hatred. The second great division will be recollected as including the particulars of his being sold, his serving in Potiphar's house, and his conduct in prison; and the third division will be remembered as containing his appearance before Pharoah, his laying up corn, his conduct to his brothers, and his reception of [Pg 91] his father and family. These subdivisions, it will at once be perceived, form the *second branch* of a regular analytical table, each of which has sprung from, and is intimately connected with, some one or other of the three great divisions forming the first branch, of which the "History of Joseph" is the comprehensive root.

In like manner, a third class of the pupils, whose minds have been better cultivated, and whose memories are more retentive, will not only remember all this, but they will also remember, in connection with each of these subdivisions, many of the more specific events included in, or springing from them, and which carry forward this regular analytical table one step farther. As for example, under the subdivision entitled "Joseph's conduct to his brethren," they will remember the "detention of Simeon,"—"the feast in the palace,"—"the scene of the cup in the sack," and "Joseph's making himself known." Even these again might be subdivided into their more minute circumstances, as a fourth, or even a fifth branch, if necessary, all of which might be exactly delineated upon paper, as a regular analytical table of the history of Joseph.

Here, then, we have an example of Nature herself dividing an audience into different classes, and that by one and the same operation,—by one reading,—forming in each class part of a regular analytical table of the whole history, each class being one step in advance of the other. The first has the foundation of the whole fabric broadly and solidly laid; and it is worthy of remark, that there is not one of the ideas acquired by the most talented of the hearers, that is not strictly and regularly derived from some one or other of the three general divisions possessed by the first and the least advanced; and any one of the ideas may be regularly traced back through the several divisions to the root itself. The additional facts possessed by the second class, are nothing more than a more full developement of the circumstances remembered by the first; and [Pg 92] those obtained by the third, are but a more extensive developement of the facts remembered by the second.

This being the state of the several classes into which Nature divides every audience, it is of importance to trace the means which she employs for the purpose of *advancing* each, and of ultimately completing the analysis; or, in other words, perfecting the knowledge of the narrative, in each individual mind. This is equally beautiful, and equally simple. It is, if we may be allowed the expression, by a regular system of building. The foundation being laid, and the frame-work of the whole being erected, in the knowledge of the great general outline, confusion is ever after completely prevented. Every piece of information connected with the history, which may be afterwards received, has a specific place provided for it. It must belong to some one or other of the three great divisions; and it is there inserted as a part of the general building. It is now remembered in its connection, till all the circumstances,—the whole of the information,—gradually, and perhaps distantly received, complete the narrative.

To follow out this plan of Nature regularly, as in a school education, the method must be exceedingly obvious; for if the first class, by once hearing the chapters read, have received merely the outline,—the frame-work of the narrative,—it must be obvious, that when this has by reflection become familiar, a second reading would enable them to fill up much of this outline, by which they would be on a par with the second. Another reading would, in like manner, add to the second, and form a third; and so forth of all the others. Each reading would add more and more to the knowledge of the pupil; and yet, every idea communicated would be nothing more than a fuller developement of the original outline,—the frame-work,—the skeleton of the story which he [Pg 93] had acquired by the first reading. By successive readings, therefore, the first class will take the place of the second, the second of the third, and so on to the end. This is Nature's uniform method of perfecting her pupils in any branch of *connected* knowledge;—a method which, therefore, it should be the object of the Educationist to understand, and closely to imitate.

From the cases which we have in this chapter supposed as examples, there are several important practical inferences to be derived, to which we shall here very briefly advert.

In the first place, we are led to infer, from all the cases brought into notice, that every kind of external force, or precipitation in education, is abhorrent to Nature. In each of the cases supposed, we have a remarkable exhibition of the calm serenity of Nature's operations in the

education of the young. For instance, in the last case supposed, the children all listened,—they all heard the same words,—the mental food was the same to each, however diversified their abilities might be; and it was indiscriminately offered in the same form to all, although all were not equally prepared to receive and digest it. The results accordingly were, in fact, as various as the number of the persons present. And yet, notwithstanding of all this, there was no hurry, no confusion, no attempt to stretch the mind beyond its strength. Each individual, according to his capacity, laid hold of as much as his mind could receive, and silently abandoned the remainder.—But if there had been any external urgency or force employed, to compel the child to accomplish more than his mind was capable of, this serenity and composure would have been destroyed; irritation, and confusion, and mental weakness, would have been the consequence; and altogether, matters would not have been made better, but worse, by the attempt.

Another inference, which we think may legitimately be drawn from the above examples, is this, [Pg 94] that although Nature prompts the child silently to throw off or reject that which the mind at the time cannot receive, yet it would be better for the child if no more had been pressed upon him than he was capable of receiving. The very rejection of any portion of the mental food presented for acceptance, must in some measure tend to dissipate the mind, and exhaust its strength. This we think is demonstrated by the fact, that the child had to listen for *an hour*, and yet retained on his memory no more than experience shews us could have been much more successfully communicated in *five minutes*.

This leads us to another remark, almost equally important; which is, that the want of classification among the children, will not only hurt them, but tend to waste the time, and unnecessarily to exhaust the strength of the teacher. The teacher's success with any one child, is not to be estimated by the pains he takes, or the extent of his labour, but by the amount of knowledge actually retained by the child. To employ an hour's labour, therefore, to communicate that knowledge which could with much better effect be given in five minutes, is both unreasonable and improper; and every one who will for a moment think on the subject must see, that a lesson, which in that short space of time conveyed the whole of the knowledge that the pupils had been able to pick up during the hour's exercise, would leave the teacher eleven-twelfths of his time to benefit the other classes. The nurseryman follows this plan with his trees, and with evident success, both in saving time, and room, and labour. When he sows his acorns, one square yard will contain more plants than will ultimately occupy an acre. It is only as they increase in growth, that they are thinned out and transplanted; and such should be the case in communicating knowledge to children. To attempt to teach the whole history at once, is like sowing the whole acre with acorns, and thinning them out during a quarter of a century. The loss [Pg 95] of seed in this case is the least of the evils; for the ground would be robbed of its strength, nine-tenths of it would be rendered unnecessarily useless during a large portion of the time; and much of the anxiety, and care, and labour of the nurseryman would be thrown away. Ultimately he would find, that of the many thousands of oaks he had sowed, he had been able to rear no more *than the acre could carry*. By following out this principle in education, and giving the child as much as he can receive, and no more, of the whole series of truths to be communicated, his mind, at the close of the exercise, will be much more vigorous, the ideas received will be much better understood, more firmly rivetted upon the memory, and much more at the command of the will, while the quantity of knowledge really communicated, is at least equal in amount.—The only thing indeed that renders a contrary plan of procedure even tolerable to a child, is the wise provision of Nature, by which she induces him to throw off, with some degree of ease, the superfluous matter; but had the reception and retention of the whole by each child been demanded by the teacher, the very attempt to do so on the part of the pupil, would not only have been irritating and burdensome, but it would have been extremely hurtful to the mind, by stretching its powers beyond its strength.

**FOOTNOTES:**

[6] Note E.

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## CHAP. VIII.

### *On Nature's Methods of Teaching her Pupils to make use of their Knowledge.*

We come now to another operation of Nature with the young, to which she appears to attach more importance than she does to any of her previous educational processes, and to which she obviously intends that a more than ordinary attention should be paid on our parts. This is the [Pg 96] training of her pupils to make use of their knowledge, and to apply the information they possess

to guide them in the common affairs of life. This is obviously the great end which she has all along had in view; and to which the cultivation of the mind, and the acquisition of knowledge are merely preparatives. We shall first direct attention to a few of the indications of this principle as they actually appear in ordinary life; and then we shall endeavour to point out some of the laws by which she appears to regulate them.

In the early periods of infancy we can plainly distinguish between certain actions which depend upon *instinct*, and which are performed by the infant perfectly and at once, without experience, and without teaching;—and others of which the infant at first appears to be incapable, but which it gradually *acquires* by experience, or more correctly, which it *learns* by an application of the knowledge which it is daily realizing. Among the former, or instinctive class, we may rank the acts of sucking, swallowing, and crying, which are purely acts of instinct; while among the numerous class belonging to the latter, we include all those actions which are progressively improved, and which are really the result of experience, derived from the application of their acquired knowledge. As an example of these, we may instance the acts of winking with the eyelids on the approach of an object to the eye; the avoiding of a blow; the rejection of what is bitter or unpalatable; the efforts made to possess that which has been found pleasant; and the shunning of those acts for which it has been reproved or punished. All these, and thousands of similar acts, are really the result of a *direct application of previous knowledge*, and which, without the possession of that knowledge, never are, nor could be performed.

Mankind in infancy being, in the intention of Nature, placed under the care of tender and intelligent parents are not provided with many instinctive faculties. Their physical welfare is at [Pg 97] first left altogether to the care of the nurse; but, from a very early period of consciousness, they intellectually become the pupils of Nature. Almost all their actions are the results of experience; —of knowledge acquired, and knowledge applied. Their attainments at the beginning are no doubt few;—but, from the first, they are well marked, and go on with increasing rapidity. The acquisition of knowledge by them, and especially the application of it, are evident to the most cursory observer. For example, we see a child cling to its keeper, and refuse to go to a stranger; —we see it when hungry stretch out its arms, and cry to get to its nurse;—and when it has fallen in its efforts to walk, it will not for some time attempt it again. These, and many more which will occur to the reader, are the results of Nature's teaching;—her suggestions to her pupil for the right application of its knowledge. The child has been taught from experience that it is safe and comfortable with its keeper, and it applies this knowledge by refusing to leave her. It has learned how, and by whom, its hunger is to be satisfied; and it applies this knowledge by seeking to be with its nurse. It has learned by experience, that the attempt to walk is dangerous; and it applies that knowledge by avoiding the danger. Here the child is wholly as yet in the hands of Nature; and it is quite evident, that her design in first enabling the pupil to acquire those portions of knowledge, was, that she might induce him to apply them for his safety and comfort. No doubt the mental powers of the child were cultivated and disciplined by the acquisition of the knowledge, and still more by its application; but this disciplining of the mind, and accumulation of knowledge, were evidently a secondary object, and not the primary one. Health and cheerfulness are gained by tilling the ground; yet the ground is not tilled for the purpose of [Pg 98] securing health and cheerfulness. It is for the produce of the harvest. So, in like manner, the cultivation of the child's mind, and the reception of the seeds of knowledge, are merely means employed for a further end,—the harvest of comfort and usefulness to be afterwards reaped. From all this we are directly led to the conclusion, that it is the intention of Nature, that all the knowledge acquired should be put to use; and therefore, that nothing should be taught the young, in the first place at least, except that which is really useful; while the proper use of all that they learn should be diligently pointed out.

It may appear to some, that this truth is so plain and obvious, as to require no further illustration or enforcement.—We sincerely wish that it were so. But long experience justifies us in being sceptical on the point. And as the establishment of this principle, and a thorough knowledge of its working, are perhaps of more value than any other truth in the whole range of educational science, we shall offer a few remarks on its validity and importance, before proceeding to examine the means by which Nature carries it into operation.

That knowledge, when once acquired, is intended by Nature to be put to use, is proved negatively by the well known fact, that almost all our *mental* acquirements, when not used, are soon lost. They gradually fade from the mind, and are at last blotted from the memory. Hence the disappearance in after life of all the academical and collegiate acquirements of those youths who move in a sphere where their use is not required; and of those portions of the early attainments of even professional men, which are not necessary for their particular pursuits. By the universal operation of this principle, Nature gives fair warning of the folly of useless learning; and plainly indicates, that whenever the benefits which she confers are not put to use as she designed, they [Pg 99] will gradually, but most certainly, be withdrawn.

The same fact is also proved positively:—For we find, that the proper use of any portion of our knowledge, is invariably rewarded by its becoming still more familiar. The student who puts a principle in chemistry to the test of experiment, will understand it better, remember it longer, and be able to apply it to useful purposes, much more readily than his companion who merely reflects upon it. And of two individuals, who by a lecture have been taught the duty and the delights of mercy, that one will learn it best, and remember it longest, who, immediately on hearing it, is prompted to relieve a fellow creature from distress, or to save a family from ruin.

This principle of making every thing conduce to the promotion of practical good, seems to pervade all the works of God; and there is no department in Nature, mineral, vegetable, or

animal, that does not afford proofs of its existence. Every thing that the Almighty has formed is practically useful; and is arranged in such a manner as to give the clearest indications, that it was designed to be turned to some useful purpose by man. The annual and diurnal motions of the earth in its orbit; the obliquity of its axis; the inequality of its surface, and the disposition and disruption of its strata, all shew the most consummate wisdom, and are severally a call to intelligent man to turn them to use. On these, and on every other department of Nature's works, there is written in legible characters, that it is the *use* of knowledge, and not the *possession* of it merely, that is recommended. This she teaches by every operation of her hand, both directly, and by analogy. For could we suppose that the vegetable creation were capable of receiving knowledge, we might conclude from various facts, that this principle was not confined to the animal kingdom alone, but that it regulated the operations of all organic existences. The living [Pg 100] vegetable has at least the appearance of acting under its influence; for, as if it knew that light was necessary for its health and growth, it invariably turns towards the light;—as if it knew that certain kinds of decayed matter were better fitted for its nourishment than others, it pushes out new fibrous roots in the direction of the spot where they are to be found;—and even when isolated on a rock, or a wall, at a distance from sufficient soil and moisture, it husbands its scanty means, and sends down from its elevation an extra root to the ground, to collect additional nourishment where it is to be had.

In every department of animal life, also, the principle appears to exist, and exhibits itself in the conduct of all free agents, from the insect to the elephant. The dog that has been kindly treated in a particular house, seldom fails to visit it again; and when he is violently driven from another, the same principle indisposes him to return. It is upon record, that a surgeon who had bandaged the broken leg of a dog, was afterwards visited by his patient, who brought another, requiring a similar operation. The horse, in like manner, is proverbially sagacious in the application of his knowledge. Mismanagement in a groom in one instance, may create a "vice," which may lessen his value during life. This "vice," which is confirmed by practice, is nothing more than the repeated application of his knowledge. Such a "vice," accordingly, is best cured by avoiding the circumstances which originally gave rise to it, till it dies from his memory. Many other instances of a similar kind in the lower animals will readily occur to the reader, all of which lead directly to the conclusion, that, even in the brute creation, Nature not only prompts them to collect information from what happens around them, and to act in correspondence to its indications; but that, in fact, all the knowledge they receive, or are capable of acquiring above instinct, is retained or lost, exactly in proportion as it is, or is not, put to use.

In the case of rational creatures, this great design of Nature is still more distinctly marked,—is [Pg 101] intended for more important purposes,—and is carried on by a separate system of internal machinery, part of which at least is peculiar to man. This system of mental machinery consists of two kinds, one of which may, we think, with propriety get the popular name of the "Animal, or Common Sense," and the other has already received the appropriate name of "The Moral Sense," or conscience. To Nature's method of using these principles, for prompting and directing us in the use of our knowledge, we shall now shortly advert.

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## CHAP. IX.

### *On Nature's Methods of Applying Knowledge by the Principle of the Animal, or Common Sense.*

When an infant, by laying hold of a hot tea-pot burns its hand, it refuses to touch it again;—when a child has been frightened from a park or field, he will not willingly enter it a second time;—and when any thing is thrown in the direction of the head, we instantly stoop, or bend to one side, to evade it. These are instances of the application of knowledge, by the principle of "common sense," which do not belong to instinct; and, in many cases at least, anticipate the exercise of reason. Our object at present, however, is with the principle, and not with its name.

When we analyze these operations, together with their causes, we find, that there are certain portions of knowledge daily and hourly acquired by the senses, which become so interwoven with our sentiments and feelings, that they usually remain unobserved, till some special occasion calls for their application. Now the principle we speak of, if it indeed be a separate principle, is employed by Nature to apply this latent knowledge, and to induce her pupil instantly, and without waiting for the decisions of reason, to perform certain actions, or to pursue a certain line [Pg 102] of conduct, which we almost instinctively feel to be useful and safe. No sane child, for example, will deliberately stand in the way of a horse or a carriage at full speed,—or walk over a precipice,—or take burning coals from the fire with his fingers; were he to do so, we would not dignify the act so far as to say that it was "unreasonable," for that would be too mild an epithet,—but we

would pronounce it at once to be "contrary to common sense."

In like manner, were an adult to bemire himself in crossing a ditch, instead of making use of the stepping-stones placed there for the purpose; or if he were to stand till he were drenched with a thunder-shower, instead of taking shelter for the time in the neighbouring shed, we would not say that it was "unreasonable," but that it was "contrary to common sense." In short, whenever any thing is done which universal experience shews to be hurtful *to ourselves*, (not to others) it is invariably denominated an act "contrary to common sense;" but whenever it involves hurt *to others*, it takes another character, and becomes a breach of the "moral sense."

It is not our design, however, to come out of our way at present, to adapt the name to the principle in Nature of which we are here speaking, and far less shall we attempt to mould the principle into a form suitable to the name. Our business is with the principle itself, as it appears in ourselves and others; and we use the term "common sense," merely because at present we cannot find one more appropriate, or which would suit our purpose so well. If this name shall be found proper for it, it is well;—but if not, we leave it to others to provide a better.

We have said, that Nature prompts to the use of knowledge by means of two distinct principles; the one, which may be denominated the "Animal," or "Common Sense," refers to actions of which *we ourselves* are the subjects; and the other, known by the term of the "Moral Sense," or [Pg 103] conscience, refers to actions of which *others* are the subjects. It is the former of these that we are at present to investigate.

We must all have observed the promptness with which we avoid any sudden danger, or inconvenience, before we have time to reason about the matter. As, for example, when we stumble, we instantly put forth the proper foot to prevent our fall. This cannot be said to be an act of the reasoning powers, because they have not had time to operate; and it is equally clear that it is not an act of instinct, because infants, who have only begun to walk have not the capacity of doing it. It is evidently another principle which, availing itself of the knowledge which the person has previously acquired by experience, now uses it specially for the occasion.

That this application of our knowledge arises neither from instinct nor from reason, will be obvious from many circumstances of ordinary occurrence.—For example, when any object approaches the eye we instantly shut it;—when any missile is thrown at us, we instantly turn the head aside to evade it;—or when in walking something destroys our equilibrium and we stumble, we instantly bend the body in the proper direction, and to the precise point, necessary to restore our balance, and to prevent our fall.—Now it is obvious, that all these contingencies are provided for by one and the same principle, whatever that principle may be; and that they are acts which do not depend upon instinct, properly so called, is proved from the circumstance, that infants, before they are taught by experience that the eye is so tender, and even adults who have but newly acquired the use of their sight, neither shut their eyes at the approach of objects, nor turn away their heads when a missile is thrown at them.—And we think it is equally clear, that it cannot be the result of reasoning, in the sense in which we generally understand that term, [Pg 104] because the mind has no time for consideration, far less for reasoning, during the short moment that occurs between the cause and the effect.

The object which we have chiefly in view at present is, to point out the great end designed by Nature in all these actions, which is simply *the application of knowledge*. There is the knowledge that objects entering the eye will give pain, and that the shutting of the eye will defend it. This we have shown is not an instinctive operation, but must have been acquired by experience;—and it is this principle, into the nature of which we are now enquiring, that prompted the child in the special case to apply its knowledge by shutting the eye. In like manner, in the case of the missile thrown at the head, there is a previous knowledge of the effect which it will produce, and a knowledge also of the means by which it is to be avoided,—and it is avoided;—and in the case of losing the equilibrium, there is nothing more than the application of a latent knowledge, now suddenly brought into use on the spur of the moment, that by the movement of the foot the body will be supported. The principle, whatever it be, which instigates children and adults to do all this, is the subject of our present enquiry, and which for the present we have denominated the "Animal," or "Common sense." We shall therefore a little more particularly attend to its various indications.

The operation of this principle in the infant has already been pointed out. When it has learned by experience that its nurse is kind, it stretches forth its little hands, and desires to be with the nurse;—when in its first attempt at walking it experiences a fall, it applies this knowledge, by refusing again for some time to walk;—and when it burns its finger at the flame of the candle, the application of that knowledge induces it ever after to avoid both fire and flame.

In after life the same principle continues to operate both independently of reason, and in [Pg 105] conjunction with it. In encountering the air of a cold night, we, without reasoning on the matter, wrap ourselves closer in our cloak. When we turn a corner, and meet a sharp frosty wind, we lower the head to protect the uncovered face. When we emerge from the house, and perceive that the dulness of the day indicates rain, we almost instinctively return for a cloak or an umbrella. And the mariner at sunset, when he sees an opening in the sky indicating a storm, immediately takes in sail, and makes all snug for the night. In all these cases we perceive a principle within us, frequently operating along with reason, but sometimes also without it, which prompts us to apply our previous knowledge for our present comfort and advantage.[7] The constant operation of such a principle in our nature, no matter by what name it is called, leads us, as plainly as analogy and natural phenomena can do, to conclude, that it ought to be carefully studied, and assiduously cultivated in the young, during the period usually assigned for their

education.

When we carefully trace the operation of this principle in common life, it appears that, in fact, the greater portion of our physical comforts depends upon it. "Experience" is but another name for it. We find some substances warmer, softer, harder, or more workable than others, and we apply this knowledge by substituting one for another. The savage finds the wigwam more convenient, or more easily come at, than a cave or a crevice in a rock, and he builds a wigwam;—he finds a hut more durable than a wigwam, and he substitutes a hut;—he at last finds a cottage still more convenient, and he advances in his desires and his abilities by his former experience, and he builds one.—In every advance, however, it is the application of his previous knowledge that increases his comforts, and tends to perpetuate them; and accordingly, as a proper and a [Pg 106] general application of the "moral sense," leads directly to national *virtue*; so the proper and general application of this principle of "common sense" goes to promote every kind of personal and family *comfort*, as well as national *prosperity*. Its ramifications pierce through every design and action of industry and genius. It is the exercise of this principle alone which, in the worldly sense, distinguishes the wise man from the fool; and which gives all the superiority which is possessed by a civilized, over a savage community. It is the chief guardian of our safety, and the parent of every personal and domestic comfort. It is, in short, familiarity with its exercise that imparts confidence to the philosopher, decision to the legislator, dexterity to the artificer, and perfection to the artist. In each case it is the accumulation of knowledge *put to use*, which makes the distinction between one man and another; and it is by the aggregation of such men that a nation becomes prosperous. It must never therefore be forgotten, that it is not the possession of knowledge, but the use which we make of it, that confers distinction. For no truism is more incontrovertible than this, that knowledge which we cannot or do not use, is really useless.

There is no wonder then that Nature should be at some pains in training her pupils to an exercise on which so much of their happiness and safety depends; and it is of corresponding importance, that we should investigate the means, and the mode by which she usually accomplishes her end. If we can successfully attain this knowledge, we may be enabled to pursue a similar course in the training of the young, and with decided advantage.

When we take any one of the numerous examples of the working of this principle in the adult, and carefully analyze it, we can detect three distinct stages in the operation, before the effect is produced. The *first* is the knowledge of some useful truth, present to the mind, and at the [Pg 107] command of the will;—there is, *secondly*, an inference drawn from that truth, or portion of our knowledge, or the impression of an inference which was formerly drawn from it, and which, as we have seen in the infant, may remain long after the circumstance from which the lesson was derived has been forgotten;—and there is, *thirdly*, a special application of that inference or impression to our present circumstances. For example, in the case of the person leaving the house, and suddenly returning to provide himself with an umbrella, there is first the knowledge of a fact, that "the sky is lowering;" then there is an inference drawn from this fact, that "there will most probably be rain;" but the comfort—the whole benefit arising from this knowledge, and from this reasoning upon it,—depends on the third stage of the operation, which is therefore the most important of all, namely, the application of the inference, or lesson, to his present circumstances. A mere knowledge of the fact that the sky lowered, would have remained a barren and a useless truth in the mind, unless he had proceeded to draw the proper inference from it; and the inference itself, after it was drawn, would have done him no good, but must rather have added to his uneasiness, had he not proceeded to the third step of the operation, and applied the whole to the regulation of his conduct, in providing himself with an umbrella or a cloak.

In like manner, in the supposed case of the mariner expecting a storm, there was first the knowledge of the fact, that the "sky was in a certain state." Now of this knowledge every person on board might have been in possession as well as the master himself, without the slightest benefit accruing to themselves or the ship, unless they had been trained, or enabled to draw the proper inference or lesson from it. The mere possession of the knowledge, therefore, would have been of no advantage. But the practised eye, and the previous experience of the master, enabled him to draw the inference, that "there will be a storm." Even this, however, would not have saved [Pg 108] the ship and crew, without the third, and the most important step of all,—the application of that inference or lesson to their present condition. It was that which induced him to give the necessary orders to prepare for the storm, and thus to secure the safety both of the ship and of all on board.

Again, in the case of the infant burning its finger, there appears to be something like a similar process, which we can trace much better than the child itself. The child puts its finger to the flame of the candle, and it feels pain; from which it learns, for the first time, that flame burns. This is the knowledge which it has acquired. But there is also an inference drawn from that knowledge, not by reasoning, but by the operation of the principle under consideration, an inference of which it is probable the child itself at the time is unconscious, but the existence of which is sufficiently proved by its uniform conduct afterwards. By the operation of this principle in the child's mind, before he can reason, he has inferred, that if he shall again touch flame, he will again feel pain. He will very probably forget the particular circumstance in which his finger was burned, but the inference then drawn,—the impression made upon the mind, and which corresponds to an inference,—still remains, and is made the chief instrument which Nature employs in this most important part of all her valuable educational processes. The child accordingly is found ever after, not only preserving the particular finger that was burned, but all its fingers and members, from a burning candle; and not from a candle only, but from fire and flame of every kind.

This appears to be the natural order of that process of which we are here speaking; and before leaving it, there are two or three circumstances connected with it, that we ought not to omit noticing, more particularly, because the whole of them appear to hold out additional evidence of [Pg 109] the little value which Nature attaches to knowledge for its own sake, and of her decided approval of its acquisition, only, or at least chiefly, when it is reduced to practice.

The first of these circumstances is, that Nature, in all cases, teaches popularly—not philosophically; that is, she does not refuse to teach one part of a connected series of phenomena, because the whole is not yet perceived; nor does she neglect the use of the legitimate application of an ascertained truth, because the principle or law by which it acts remains as yet undiscovered. Her object evidently is, the attainment of the most *useful* part of the knowledge presented to her pupil, and the *practical use* of that part; leaving the investigation of the other parts to the will or convenience of the person afterwards. The infant accordingly made use of its knowledge, although it knew nothing about the nature of flame; and the man and the mariner would have done as they did, although they had known nothing at all about the science of meteorology.

The second remark which we would here make is, that Nature, in most cases, appears to put much more value on the inferences, or lessons, drawn from the knowledge we have acquired, than she does upon the knowledge itself. For example, in the case of the infant burning its finger, the circumstance itself will soon be forgotten; but the inference, or the impression acquired by its means, will remain. And when at any subsequent period it avoids fire or flame, its mind is not so much occupied by the abstract truth that flame will burn, as by the lesson learned from that truth, that it should not meddle with it. This inference it now practically applies to its present situation. That the abstract truth,—the knowledge originally derived from the fact,—is included in the lesson, may be quite true; but what we wish at present more particularly to point out is, that *it is seldom adverted to by the infant*. The inference,—the lesson which the truth suggested,—is [Pg 110] all that the child thought of. That alone is the fabric which Nature has been employed in rearing; and the original truth has been used merely as scaffolding for the purpose. The edifice itself, accordingly, having been completed, the scaffolding is allowed to fall, as having answered its design.

The same conclusion may be come to, by attending to the circumstances connected with the operation of the principle in adults.—The person who returned for his great-coat or umbrella after having drawn the inference from the appearance of the sky, thought only of the coming shower; and we could easily suppose a case, where the original indication of the sky might be totally forgotten, while the full impression that it would rain might still continue. In like manner, the mariner, in the bustle of preparation, thinks only of the dreaded storm, while the original circumstance,—the knowledge from which the inference was drawn,—is now unheeded, or entirely forgotten.

The other circumstance to which we would here solicit attention, as proving the same thing, is one to which we formerly alluded. It is the remarkable fact, that knowledge, of whatever kind, when it is practised, becomes more and more familiar and useful; while that which is not acted upon, is soon blotted from the memory and lost. Writing, arithmetic, and spelling, not to speak of grammar, geography, and history, when not exercised in after life, are frequently found of no avail, even at times when they are specially required.—Why is this? They were once known. The knowledge was communicated at a time when the mind and memory were best fitted for receiving and retaining them. But Nature in this, as in every other instance, has been true to herself; and the knowledge which is not used has been blighted, and at last removed from the memory and lost.

From all these circumstances taken together, we are led to conclude, that Nature never [Pg 111] conveys knowledge without intending it to be used;—that by a principle in our constitution, which we have denominated "common sense," Nature prompts even infants to employ their knowledge for their own special benefit;—that this principle continues invariably to act, till it is assisted or superseded by reason;—and that the process consists in drawing inferences, or lessons, from known facts, and in practically applying them to present circumstances. All which points the Educationist directly to the conclusion, that the communication of knowledge is one of the *means*, but not the *end*, of education;—that the lessons derived from the knowledge communicated, are infinitely more valuable than the knowledge itself;—and that the great design of education is, and ought to be, to train the young to know how to use, and to put to use, not only the knowledge communicated at school, but all the knowledge which they may acquire in their future journey through life.

**FOOTNOTES:**

[7] Note F.

## CHAP. X.

### *On Nature's Method of applying Knowledge by means of the Moral Sense, or Conscience.*

Nature enables her pupils to apply knowledge by means of the moral sense, or conscience, as well as by the animal, or common sense. There is however this great difference in the manner in which they operate,—that whereas every infringement of the natural or physical laws which regulate the application of knowledge by what we have called the common sense, is invariably followed by its proper punishment,—the consequences of infringing the laws which regulate the moral sense, are neither so immediate, nor at the time so apparent. The child knows, that by putting his finger to the candle, burning and pain will instantly follow;—but the evil [Pg 112] consequences of purloining sweet-meats, or telling a lie to avoid punishment, are not so obvious. Does Nature then put less value on moral integrity, than on worldly prudence? Certainly not. But in the latter case she deals with man more as a physical and intellectual being; and in the former, as a moral, a responsible, and an immortal being. The lower animals to a great extent participate with us in the benefits arising from attention to the laws which govern physical enjoyments; but they know nothing of a moral sense, which is peculiar to intelligent and accountable creatures. From this we may safely conclude, that the application of knowledge by means of the moral sense, or conscience, is of infinitely more importance to man than the application of his knowledge by the animal, or common sense.

For the purpose of arriving at accurate conclusions on this subject, in reference to education and the application of knowledge, we shall endeavour to investigate a few of the phenomena connected with the moral sense, as these are exhibited in the young and in adults; and shall, in doing so, attempt to trace the laws by which these phenomena are severally guided.

1. The first thing we would here remark, is, that the operations of the moral sense appear to be resolvable into two classes, which may be termed its *legislative* and its *executive* powers. When conscience leads us merely to judge and to decide upon the character of a feeling or an action, whether good or evil, it acts in its *legislative* capacity; but when it reproves and punishes, or approves and rewards, for actions done, it acts in its *executive* capacity. These two departments of the moral sense seem quite distinct in their nature and operations; and, as we shall immediately see, they not only exist separately, but they sometimes act independently of each other.

2. Another circumstance connected with conscience is, that her *legislative* powers do not [Pg 113] develope themselves, nor appear to act, till the reasoning powers of the person begin to expand. Then, and then only does the pupil of Nature, who has not had the benefit of previous moral instruction, begin to decide on the merit or demerit of actions. Infants, and children who are left without instruction, appear to have no distinct perception that certain actions are right, and others wrong. In infancy, we frequently perceive the most rebellious outbreakings of ungoverned passion, with tearing, and scratching, and beating the parent, without any indication of compunction, either at the time, or after it has taken place. Even in children of more advanced years, while they remain without moral instruction, and before the reasoning powers are developed, the injuries which they occasion to each other, or which they inflict upon the old, the decrepit, or the helpless, are matters of unmingled glee and gratification, without the slightest sign of conscience interfering to prevent them, or of giving them any uneasiness after the mischief is done. Instead of sorrow, such children are found invariably delighted with the recollection of their tricks; and never fail to recapitulate them to their companions afterwards, with triumph and satisfaction.—But it is not so with the adult. As soon as the reasoning powers are developed, the legislative functions of conscience begin to act, enabling and impelling the person to decide at once on actions, whether they are right or wrong, good or evil. Such a person, therefore, could not strike nor abuse his parents, without knowing that he was doing wrong; nor could he tantalize or injure the aged or the helpless, without conscience putting him upon his guard, as well as reproving and punishing the crime by compunctious feelings after it was committed.

From this we perceive, that the legislative powers of conscience are usually dormant in the child, and do not, when left to Nature, act till the reasoning powers have exhibited themselves; [Pg 114] from which we are led to conclude, that it is by an *early education*,—by *moral instruction* alone,—that the young are to be guarded against crime, and prepared and furnished to good works.

3. This leads us to observe another remarkable circumstance, corroborative also of the above remark, which is, that although the legislative powers of conscience are but very imperfectly, if at all developed in children, yet the *executive* powers are never absent, where moral instruction has previously been communicated.—A child of very tender years, and even an infant, may be taught, that certain actions are good and should be performed, while others are evil and must be avoided. This is matter of daily experience; and a little attention to the subject will shew, that moral instruction in the case of the young, acts the same part that the legislative powers of conscience do in the adult. But what we wish at present more particularly to remark is, that whenever such moral instruction has been communicated, Nature at once sanctions it, and is ever ready to use the executive powers of the conscience for the purpose of rendering it effective. When therefore good actions have been pointed out as praiseworthy and deserving of approbation, there is a strong inducement to practise them, and a delightful feeling of

satisfaction and self-approval after they have been performed. And when, on the contrary, certain other actions have been denounced as wicked, and which, if indulged in, will be punished either by their parents or by God, the child feels all the hesitation and fear to commit them, that is observable in similar cases among older persons; and, when committed he experiences the same remorse, and terror, and self-reproach, which in the adult follow the perpetration of an aggravated crime. This is a circumstance which must be obvious to every reader; and it distinctly intimates, that the God of Nature intends that the legislative powers of conscience should in all [Pg 115] cases be *anticipated* by the parent and teacher. The moral instruction or the young is to be the rule; the neglect of it, although in some measure provided for, is to be the exception. The lesson is as plain as analogy can teach us, that, while there is written on the heart of man such an outline of the moral law as will leave him without excuse when called to judgment, yet it is not the design of the Creator that, in a matter of such vast importance as the moral perfection of a rational creature, we should trust to that, and, like savages, leave our children to gather information respecting moral good and evil solely from the slowly developed and imperfect dictates of their own nature. The whole phenomena of the natural conscience shew, that although God secures the operation of the legislative powers of conscience to direct the actions of the man when they are really required, yet he intends that they should be anticipated by moral instruction given by the parent. And this is proved by the remarkable fact, that when this instruction is communicated, the executive powers of conscience immediately come into operation, and homologate this instruction, by approving of it, adopting it, and acting upon it.

4. This is still farther obvious from a fourth consideration, which is, that wherever moral instruction has been communicated to the young, the legislative powers of conscience are either altogether superseded, or left dormant.—Every person who in youth has received a regular moral and religious education, and who retains upon his mind the knowledge then communicated, is found through life to act upon *that* knowledge chiefly, if not entirely. He seldom thinks of the dictates of his natural conscience, and but rarely perceives them. In every decision to which he comes as to what is right or wrong, reference is generally made in his mind, either to the declarations of Scripture, or to the moral instructions which he has formerly received; and upon [Pg 116] these he invariably falls back, when any action of a doubtful character is presented for his approval or rejection. From this very remarkable circumstance, we at once ascertain what are the intentions of Nature. She very plainly requires the early moral instruction of the young, by those into whose hands she has placed them; because she is here found to encourage and acknowledge this instruction at the expense of her own legislative powers, which not being now required, are allowed to lie idle.

5. Another circumstance connected with this subject, is the well known fact, that children are found capable of moral instruction long before the time that Nature usually begins to develope the legislative powers of the conscience.—A child, almost as soon as he can be made to know that he has an earthly father, may be taught that he has another Father in heaven; and when he can be induced to feel that a certain line of conduct is necessary to secure the favour of the one, he may also be led to comprehend that certain dispositions and actions will please the other. Now, that a child can be taught and trained to do all this with respect to his parents, is matter of daily experience. As soon as he can understand any thing, and long before he can speak, he may be enabled to distinguish between right and wrong, as well as to do that which is good, and to avoid that which is evil; and in every case of this kind, Nature sanctions the moral instruction communicated, by invariably following it up with the practical operation of the executive powers of conscience, which always approve that which the child thinks is good, and reprove that which he supposes to be wrong. The triumphant gleam of satisfaction which brightens the countenance of a child, and the laughing look and pause for approval when he has done something that he knows to be right, are abundant proofs of the truth of this observation; while his cowering scowl, [Pg 117] and fear of reproof or punishment, when he has done that which is wrong, are equal indications of the same thing. Nature, therefore, that has given the capacity of distinguishing between good and evil when thus communicated, and that invariably approves of the operation, and assists in it, has most certainly intended that it should be exercised. This consideration, taken in connection with its advantages to the family, to the child, to the future man, and to society, plainly points out the value and the importance of early religious instruction and moral training.

6. Another circumstance, in connection with the application of knowledge by means of the conscience, should not be overlooked. It is the remarkable fact, that Nature has implanted in the mind of the young a principle, by which they unhesitatingly believe whatever they are told.—A child who has not been abused by frequent deceptions, is a perfect picture of docility. He never for a moment doubts either his parent or his teacher when he tells him what is right and what is wrong. If he be taught that it is a sin to eat flesh on Fridays, he never questions the truth of it; and if told that he may kill spiders, but should not hurl flies, he may wonder at the difference, but he never doubts the correctness of the statement. This disposition in children is applicable to every kind of instruction offered to them;—but the superior importance of moral, to every other kind of truth, and the beneficial effects of the principle when applied to moral and religious training, shew that it is chiefly designed by Nature for aiding the parent and teacher in this most important part of their labours.

7. Another circumstance connected with this subject is, that the executive powers of conscience always act according to the belief of the person, and not according to what would have been the dictates of conscience in the exercise of her legislative functions.—This of itself is a sufficient proof of the separate and independent agency of these two principles. The legislative powers, as [Pg 118] at first implanted in the heart of man, there is reason to believe, would, if allowed to act freely, never have been in error; and even still, they are generally a witness for the purity of truth;—but

the executive powers invariably act, not according to what is really the truth, but according to what the person himself believes to be right or wrong. The child who was told that it was a sin to eat flesh on a Friday, would be reproved by his conscience were he to indulge his appetite by doing so;—and the conscience of the zealous Musselman, which would smite him for indulging in a sip of wine, would commend and reward him by its approval, for indulging in cruelty and injustice to the unbeliever in his faith. The executive functions of conscience then act independently of the legislative, and frequently in opposition to them. There must be a feeling of wrong, before the executive powers will reprove; and there must be a sense of merit, before they will commend;—but a mistake in either case makes no apparent difference. This is another, and a powerful argument for the early moral instruction of the young; and it shews us also, the greater value which Nature puts upon the *application* and *use* of knowledge, than upon its possession. She not only encourages this application in all ordinary cases; but here we find her, for the purpose of maintaining the general principle, lending her assistance in the application and use of the knowledge received, even when the knowledge itself is erroneous, and the application mischievous.

8. Another important circumstance which is worthy of especial notice, is, that conscience is much more readily acted upon by *examples*, than by *precepts*.—In communicating a knowledge of duty, this principle in Nature has become proverbial; but it is not less true with respect to the executive powers, in approving or reproving that which is right or wrong. It is the prerogative of conscience to excite us to approve or condemn the conduct of others, as well as our own; and this [Pg 119] is regulated, not by strict truth, but by our belief at the time, whether that belief be correct or the contrary. Now the precept, "Thou shalt not kill," would be sufficient to make the executive powers of conscience watchful, in deterring the individual from the crime, or in reproving and punishing him if he committed it. But the mere precept would have but little effect in exhibiting to him the full atrocity of the sin, in comparison with an anecdote or a story which detailed its commission. But even this would not be so powerful as the effect produced by a murder committed in a neighbouring street, and still more were it perpetrated in his own presence. The necessary inference to be drawn from this remarkable fact is, that moral truth is much more effectively taught by example than by precept; and accordingly we find, that at least four-fifths of scripture, which is altogether a moral instrument, consist of narrative, and are given specially, "that the man of God may be perfect, thoroughly furnished to every good work."

9. Another circumstance worthy of observation is, that the executive powers of conscience appear to be exceedingly partial when exercised upon actions done by *ourselves*, in comparison of its decisions upon the same actions when they are committed by *others*.—When we ourselves perform a good action, the approval of our conscience is more lively and more extensive, than it would have been had the good action been that of another. On the contrary, it would be more ready to perform its functions, and more powerful in impressing upon our minds the demerit or wickedness of an action committed by another, than if we ourselves had committed it. The reason of this is obviously self-love, which partly overbears the natural operations of this principle. Violence of passion and strong desire, when we are tempted to commit a crime, are hostile movements against the dictates of conscience; and they too frequently, by their excess, stifle and [Pg 120] drown the still small voice which does speak out, but which, for the moment, is not heard within us.—But nothing of this kind takes place when the crime is committed by others. We are then much more impartial; and conscience is permitted to utter her voice, and to make her impressions without opposition. This impartial decision on the conduct of others, is found to be a great means of preventing us from the future commission of a similar crime; and this affords us another powerful argument in favour of early instruction and moral training. By attending early to this duty, the mind of the child is made up, and sentence has been pronounced on certain acts, before selfishness or the passions have had an opportunity of blinding the mind, or silencing the conscience. By proper moral training the pupil is fortified and prepared for combating his evil inclinations when temptations occur; but without this, he will have to encounter sudden temptations at a great disadvantage.

10. Another circumstance connected with this subject is, that the moral sentiments and feelings above all others, are improved and strengthened by exercise; and are weakened, and often destroyed by disregard or opposition.—Every instance of moral exercise or moral discipline, invigorates the executive powers of conscience, and renders the moral perceptions of the person more acute and tender. Every successful struggle against a temptation, implants in the mind of a child a noble consciousness of dignity, and confers a large amount of moral strength, and a firmer determination to resist others. In this respect, the good derived from the mere knowledge of a duty and its actual performance is immense. A child who is merely told that a certain action is praiseworthy, is by no means so sensible of the fact, or of its value, as he is after he has actually performed it; and when, on the contrary, he is told that a certain action is wrong, he is no doubt prepared to avoid it; but it is not till he has been tempted to its commission, and has [Pg 121] successfully overcome the temptation, that he is fully aware of its enormity. When he has successfully resisted the first temptation, he is much better prepared than any exhortation or warning could make him for resisting and repelling a second;—while every successive victory will give strength to the executive powers of the conscience, and will render future conflicts less hazardous, and resistance more easy. For the same reason, an amiable action frequently performed does not pall by repetition, but appears more and more amiable, till the doing of it grows into a habit; and the approval of conscience becoming every day more satisfactory, the person will be stimulated to its frequent and regular observance.

But the opposite of this is equally true.—The continued habit of suppressing the voice of conscience will greatly weaken, and will at last destroy its executive powers. When a person

knows that a certain action is wrong, and is tempted to commit it,—conscience will speak out, and for the first time at least it will be listened to. But if this warning be neglected, and the sin be committed, the conscience will be proportionally weakened, and the self-will of the individual will acquire additional strength. When the temptation again presents itself, it is with redoubled power, and it meets with less resistance. It will invariably be found in such cases, that the person felt much more difficulty in resisting the admonitions of conscience in the case of the first temptation, than in that of the second; and he will also feel more during the second than he will during the third. Frequent resistance offered to the executive powers of conscience will at last lay them asleep. The beginning of this downward career is always the most difficult; but when once fairly begun, it grows every day more easy, till the habit of sin becomes like a second nature.

11. There is yet another feature in the exhibition of the moral sense in adults, which ought not to be overlooked by the Educationist in his treatment of the young. We here allude to the [Pg 122] remarkable fact, that the conscience scarcely ever refers to consequences connected merely with this world and time, but compels the man, in spite of himself, to fear, that his actions will, in some way or other, have an influence upon his happiness or his misery in another world, and through eternity.—The mere uneasiness arising from the fear of detection and punishment by men, is a perfectly different kind of feeling, and never is, and never ought to be, dignified with the name of conscience. It is the consequence of a mere animal calculation of chances;—similar to the feelings which give rise to the cautious prowling of the hungry lion, or the stealthy advances of the timorous fox. But the forebodings, as well as the gnawings of conscience, extend much farther, and strike much deeper, than these superficial and animal sensations. Conscience in man, as long as it is permitted to act freely, has always a reference to God, to a future judgment, and to eternity, and is but rarely affected by worldly considerations. The valuable lesson to be drawn from this circumstance obviously is, that the parent and teacher ought, in their moral training of the young, to make use of the same principle. The anticipated approbation or displeasure of their earthly parents or teachers, or even the fear of the rod and correction, is not enough. Children are capable of being restrained by much higher motives, and stimulated to duty by nobler and more generous feelings. The greatness, the holiness, the unwearied goodness, and the omnipresence of their heavenly Father, present to the rational and tender affections of the young, a constantly increasing stimulus to obedience and self-controul;—while the fear of mere physical suffering will be found daily to decrease, and may perhaps in some powerful minds at last altogether disappear. The horse and the dog were intended to be trained in the one way;— [Pg 123] but rational and intelligent minds were obviously intended to be trained in the other.

Of these facts, connected as they are with the application of knowledge by means of the moral sense, the Educationist must make use for the perfecting of his science. They are the most valuable, and therefore they ought to form the most important branch of his investigations. All the other parts of Nature's teaching were but means;—this is obviously the great end she designed by using them, and therefore it ought to be his also.

In regard to the practical working of this important part of Nature's educational process, we need only remark here, that the application of the pupil's knowledge connected with the moral sense, is precisely the same in form, as in that connected with the common sense. There is always here first, as in the former case, some fundamental truth, generally derived from Scripture, or founded on some moral maxim, and presented in the form of a precept, a promise, a threatening, or an example;—there is next a lesson or inference drawn from this truth;—and there is, lastly, a practical application of that lesson or inference to present circumstances.

For the purpose of illustrating this, let us suppose that a boy who has been trained in imitation of Nature, is tempted by some ungodly acquaintances to join with them in absenting himself from public worship, and in breaking the Sabbath. The moment that such a temptation is suggested to him, a feeling arises in his mind, which will take something like the following form:—"I ought not to absent myself from public worship;"—"I ought not to break the Sabbath;"—"I ought not to keep bad company." Here are three distinct lessons suited to the occasion, obviously derived from his previous knowledge, and which he has been trained either directly or indirectly to draw from "the only rule of duty," the Bible. When, accordingly, the temptation is farther pressed upon him, and [Pg 124] the reasons of his refusal are regularly put into form, they appear in something like the following shape and order:—"I must not absent myself from public worship; for thus it is written, 'Forget not the assembling of yourselves together;' and, 'Jesus, *as his custom was*, went to the synagogue on the Sabbath day.'"—"I must not profane this holy day; for thus it is written, 'Remember the Sabbath day to keep it holy,'"—And, "I must not go with these boys; for thus it is written, 'Go not in the way of the ungodly;' and 'Evil communications corrupt good manners.'"

Whoever will investigate the subject closely, will find, that the above is a pretty correct picture of the mental process, wherever temptation is opposed and overcome by means of religious principle;—but it is also worthy of remark, that the form is still nearly the same by whomsoever a temptation is resisted, and whether they do or do not take the Scriptures for their text-book and directory. The only difference in such a case is, that their lessons have been drawn from some *other* source. For example, another boy exposed to the above temptation might successfully resist it upon the following grounds. He might say, "I must not absent myself from public worship; because I shall then lose the promised reward for taking home the text;"—"I dare not profane the Sabbath; because, if I did, my father would punish me;"—"I will not go with these boys; because I would be ashamed to be seen in their company." In this latter example, we have the same lessons, and the same application, although these lessons have been derived from a more questionable, and a much more variable source. In both cases, however, it is the same operation

of Nature, and which we ought always to imitate therefore upon scriptural and solid grounds.

These examples might be multiplied in various forms, and yet they would in every case be found substantially alike. The application of knowledge, whether by the common or the moral [Pg 125] sense, is carried forward only in one way, in which the truth, the lesson, and the application, follow each other in natural order, whether they be perceived or not. To this process, therefore, every branch and portion of our knowledge ought to be adapted, as it is obviously the great end designed by Nature in all her previous endeavours. The parent, therefore, or the teacher, who wilfully passes over, or but slightly attends to these plain indications, is really betraying his trust, and deeply injuring the future prospects of his immortal charge.

The several circumstances enumerated in the previous part of this chapter, as connected with the moral sense, are capable of suggesting many important hints for the establishment of education; but there are one or two connected with the subject as a whole, to which we must very shortly allude.

In the first place, from the foregoing facts we are powerfully led to the conclusion, that all kinds of physical good, such as health, strength, beauty, riches, and honours, and even the higher attainments of intellectual sagacity and knowledge, are, in the estimation of Nature, not once to be compared with the very lowest of the moral acquirements. With respect to the former, man shares them, though in a higher degree, with the brute creation;—but *morals* are altogether peculiar to higher intelligences. To man, in particular, the value of moral discipline is beyond calculation:—For, however much the present ignorance and grossness of men's minds may deceive them in weighing their respective worth, yet it would be easy to shew, that the knowledge and practice of but one additional truth in morals, are of more real value to a child, than a whole lifetime of physical enjoyment. Nature has accordingly implanted in his constitution, a complete system of moral machinery, to assist the parent in this first and most important part of his duty,—that of guiding his children in the paths of religion and virtue. The executive powers [Pg 126] of conscience are always alive and active, stimulating or restraining both young and old, wherever the action proposed partakes of the character of right or wrong. And, even where the parental duties in this respect have been neglected, Nature has, in part, graciously provided a remedy. In all such cases, during the years of advancing manhood, the law is gradually and vividly written upon the heart. Its dictates are generally, no doubt, dimmed and defaced by the natural depravity and recklessness of the sinner; but even then, they are sufficiently legible to leave him without excuse for his neglect of their demands.

The preference which Nature gives to moral acquirements, is demonstrated also by another feature in her different modes of applying knowledge by the common and the moral senses. In the attainment of physical good, Nature leaves men, as she does the lower animals, in a great measure to themselves, under the guardianship of the common sense; but, in respect to actions that are morally good or evil, she deals with them in a much more solemn and dignified manner. A transgression of the laws of the natural or common sense, is, without discrimination and without mercy, visited with present and corresponding punishment; plainly indicating, that with respect to these there is to be no future reckoning;—while the trial and final judgment of moral acts are usually reserved for a future, a more solemn, and a more comprehensive investigation.

Another inference which legitimately arises out of the above considerations, as well as from the facts themselves, is, that religion and morals are really intended to be the chief object of attention in the education of the young. This is a circumstance so clearly and so frequently pointed out to us, in our observation of Nature's educational processes, that no person, we think, of a philosophic turn of mind, can consistently refuse his assent to it. The facts are so numerous, [Pg 127] and the legitimate inferences to be drawn from them are so plain, that pre-conceived opinions should never induce us either to blink them from fear, or deny them from prejudice. These facts and inferences too, it should be observed, present themselves to our notice in all their own native power and simplicity, invulnerable in their own strength, and, in one sense, altogether independent of revelation. They are, no doubt, efficiently supported in every page of the Christian Record; but, without revelation, they force themselves upon our conviction, and cannot be consistently refuted. We state this fearlessly, from a consideration of numerous facts, to a few of which, selected from among many, we shall, before concluding, very shortly advert.

In the first place, it is obvious to the most cursory observer, that moral attainments and moral greatness are more honoured by Nature, and are, of course, more valuable to man, than the possession of either intellectual or physical good.—Nature has, to the possessor, made virtue its own reward, in that calm consciousness of dignity, self-approval, and peace, which are its natural results; while, even from the mere looker-on, she compels an approval. On the contrary, we find, that the highest intellectual or physical attainments, when coupled with vice, lead directly and invariably to corresponding depths of degradation and misery. No one, we think, can deny this as a general principle; and if it be admitted, the question is settled; for no person acting rationally would seek the *lesser* good for his child, at the expense of the *greater*.

Another proof of the same fact is, that Nature has provided for the physical and intellectual education of the young, by means of the animal or "common sense;" while morals are, in a great measure, left to the education of the parents. The principle of common sense, as we have seen, begins its operations and discipline in early infancy, and continues to act through life; but the [Pg 128] culture of the moral sense,—by far the most important of the two,—is left during infancy and childhood very much to the affections of the natural guardians of the child, and to the results of their education. Hence it is, that while Nature amply provides for the *neglect* of this duty, by the developement of the legislative powers of conscience towards manhood, they are comparatively feeble, and in ordinary cases are but little thought of or observed, wherever this duty has

timeously been attended to. From all these circumstances we infer, that it is the intention of Nature, that the establishment and culture of religion and morals should in every case form the chief objects of education,—the main business of the family and the school;—an intention which she has pointed out and guarded by valuable rewards on the one hand, and severe penalties on the other. When the duty is faithfully attended to, Nature lends her powerful assistance, by the early developement of the executive powers of conscience, and the virtue of the pupil is the appropriate reward to both parties; but, when this is omitted, the growing depravity of the child becomes at once the reproof and the punishment of the parents, for this wilful violation of Nature's designs.

In conclusion, it may be necessary to remark, that from these latter circumstances, another and a directly opposite inference may be drawn, which we must not allow to pass without observation.—It may be said, that the very postponement of the legislative powers of conscience till the years of manhood, shews, that religion and morals are not designed to be taught till that period arrive. Now, to this there are two answers.—*First*, if it were correct, it would set aside, and render useless almost all the other indications of Nature on this subject. In accordance with the view taken of the circumstances as above, these indications are perfectly harmonious and effective; but, in the view of the case which this argument supposes, they are all inconsistent and [Pg 129] useless.—But, *secondly*, if this argument proves any thing, it proves too much, and would infer the absurd proposition, that physical and intellectual qualities are superior in value to moral attainments;—a proposition that is contradicted, as we have shewn, by every operation and circumstance in Nature and providence. It is in direct opposition also to all the unsophisticated feelings of human Nature. No thinking person will venture to affirm, that the beauty of the courtezan, the strength of the robber, or the intelligence and sagacity of the swindler, are more to be honoured than the generous qualities of a Wilberforce or a Howard. And therefore it is, that from a calm and dispassionate consideration of these facts, and independently altogether of revelation, we cannot see how any impartial philosophic mind can evade the conclusion, that the chief object to be attended to in the education of the young, and to which every thing else should be strictly subservient, is *their regular and early training in religion and morals*.

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## CHAP. XI.

### *On Nature's Method of Training her Pupils to Communicate their Knowledge.*

There is yet a *Fourth* process in the educational system of Nature, which may be termed supplementary, as it is not intended solely, nor even chiefly, for the good of the pupil himself, but for the community.—This process of Nature consists in the training of her pupil to communicate, by language, not only his own wishes and wants, but also, and perhaps chiefly, the knowledge and experience which he himself has attained. The three previous processes of Nature were in a great measure selfish,—referring to the pupil as an individual, and are of use although he should [Pg 130] be alone, and isolated from all others of his species; but this is characteristically social, and to the monk and the hermit is altogether useless.

That this ability to communicate our sentiments is intended by Nature, not for the sole benefit of the individual, but chiefly as an instrument of doing good to others, appears obvious from various circumstances. Its importance in education, and in the training of the young, would of itself, we think, be a sufficient proof of this; but it is rendered unquestionable by the invariable decision of every unbiassed mind, in judging of a person who is constantly speaking of and for himself; and of another whose sole object in conversation, is to exalt and promote the happiness of those around him. The one person, however meritorious otherwise, is pitied or laughed at;—the other is admired and applauded in spite of ourselves.

The benevolence of this arrangement in the educational process of Nature is worthy of especial notice, as it leads us directly to the conclusion, that learning, of whatever kind, is not intended to be a monkish and personal thing, but is really designed by Nature for the benefit of the community at large. Those connected with education, therefore, are here taught, that the training of the young should be so conducted, that while the attainments of the pupil shall in every instance benefit himself, they shall at the same time be of such a kind, and shall be communicated in such a way, as shall advantage the persons with whom he is to mingle, and the community of which he is to form a part. Unless this lesson, taught us by Nature, be attended to, her plan is obviously left incomplete.

In entering upon the consideration of this part of our subject, we cannot but remark the value and the importance which Nature has attached to the higher acquisitions of this anti-selfish portion of her teaching. Language is perverted and abused, when it is generally and chiefly

[Pg 131]

employed for the benefit of the individual himself; and the decision of every candid and well-disposed mind confirms the truth of this assertion. When, on the contrary, it is employed for the benefit of others, or for the good of the public in general, it commands attention, and compels approval. Eloquence, therefore, is obviously intended by Nature for the benefit of communities; and accordingly, she has so disposed matters in the constitution of men's minds, and of society, that communities shall in every instance do it homage. In proof of this, we find, in every age and nation, wherever Nature is not totally debased by art or crime, that the most powerful orator, has almost always been found to be the most influential man. Every other qualification in society has been made to bend to this, and even reason itself is often for the moment obscured, by means of its fascinations. Learning and intellect, riches, popularity, and power, have frequently been made to quail before it; and even virtue itself has for a time been deprived of its influence, when assailed by eloquence. Nay, even in more artificial communities, where Nature has been constrained and moulded anew to suit the tastes and caprices of selfish men, eloquence has still maintained its reputation, and has generally guided the possessor to honour and to power. Amongst the lower and unsophisticated classes of society its influence is almost universal; and in most polished communities, it is still acknowledged as a high attainment, and one of the best indications that has yet been afforded of superior mental culture.

That this is not an erroneous estimate of the mental powers of a finished debater, will be evident from a slight analysis of what he has to achieve in the exercise of his art. He has, while his adversary is speaking, to receive and retain upon his mind, the whole of his argument,—separate its weak and strong points,—and call forth and arrange those views and illustrations which are calculated to overthrow and demolish it. This itself, even when performed in silence, is [Pg 132] a prodigious effort of mental strength; but when he commences to speak, and to manage these, with other equally important operations of his own mind at the same moment, the difficulty of succeeding is greatly increased. When he begins to pour forth his refutation in an uninterrupted flow of luminous eloquence;—meeting, combating, and setting aside his opponent's statements and reasonings;—carefully marking, as he goes along, the effect produced upon his hearers, and adapting his arguments to the varying emotions and circumstances of the audience;—withholding, transposing, or abridging the materials he had previously prepared, or seizing new illustrations suggested by passing incidents;—and all this not only without hesitation, and without confusion, but with the most perfect composure and self-controul;—such a man gives evidence of an energy, a grasp, a quickness of thought, which, as an exhibition of godlike power in a creature, has scarcely a parallel in the whole range of Nature's efforts. All kinds and degrees of physical glory, in comparison with this, sink into insignificance.

It is but rare indeed that any country or age produces a Demosthenes, a Pitt, a Thomson, or a Brougham; and such persons have hitherto been considered as gifts of Nature, rather than the legitimate production of educational exercises. But this we conceive to be a mistake. They may perhaps have been self-taught, and self-exercised, as Demosthenes confessedly was; but that teaching, and especially mental and oral exercise, are necessary for the production of one of Nature's chief ornaments, both analogy and experience abundantly shew.[8] Fluency in the use of words is not enough,—copiousness of thought, such as may be of use in the study, is not enough;—for Nature's work, of which we are at present speaking, consists chiefly in the faculty of forming one train of thoughts in the mind, at the same time that the individual is giving [Pg 133] expression to another. Every child, accordingly, who holds conversation with his companion, is practising on a limited scale the very exercise which, if carried out by regular gradations, would ultimately lead to that excellence which we have above described. In every case of free unconstrained conversation, the operation of this principle of Nature is apparent; for the idea is present to the mind some time before the tongue gives it utterance, and the person is preparing a second idea, at the moment he is communicating the first. Upon this simple principle the whole art of eloquence, when analyzed, appears to depend. We shall therefore endeavour to trace its operation, and the methods which Nature adopts for the purpose of perfecting it.

That this ability is altogether acquired, and depends wholly upon exercise for its cultivation, is obvious in every stage of its progress, but especially towards its commencement. When Nature first begins to suggest to an infant the use of language, we perceive that it cannot think and speak at the same moment. Long after it has acquired the knowledge of words and names, and even the power of articulating them, it utters but one syllable, or one word at a time. Its language, for a while after it has acquired a pretty extensive acquaintance with nouns and adjectives, is made up of single, or at most double words, with an observable pause between each, as if, after uttering one, it had to collect its thoughts and again prepare for a new effort, before it was able to pronounce the next. This is the child's first step, or rather the child's first attempt, in this important exercise; and it is conspicuous chiefly by the want, even in the least degree, of that power of which we have spoken. By and bye, however, the child is able to put two syllables, or two words together, without the pause;—but not three. That is a work of time, and that again has to become familiar, before four, or more words be attempted. These, however, are [Pg 134] at last mastered; and he slowly acquires by practice the ability to utter a short sentence, composed chiefly of nouns, adjectives, and verbs, without interruption, and at last without difficulty.

In the process here described, we perceive the commencement of Nature's exercises in training her pupil to the acquisition of this valuable faculty. It consists chiefly, as we have said, in enabling the child by regular practice to arrive at such a command of the mental faculties, and the powers of articulation, as qualifies him to exercise both apparently at the same moment. His mind is employed in preparing one set of ideas, while the organs of speech are engaged in giving utterance to another. He thinks that which he is about to speak, at the moment he is speaking

that which he previously thought; and if, as is generally admitted, the mind cannot be engaged upon two things at the same moment, there is here an instance of such a rapid and successive transition from one to another, as obviously to elude perception.

The various means which Nature employs in working out this great end in the young are very remarkable. We have seen that a child at first does not possess the power of uttering even a word, while his thoughts are engaged on any thing else. The powers of the mind must as it were be concentrated upon that one word, till by long practice he can at last think on one and utter another. The same difficulty of speaking and thinking on different things is observable in his amusements; and Nature appears to employ the powerful auxiliary of his play to assist him in overcoming it. When a young child is engaged in any amusement which requires thought, the inability of the mind to do double duty is very evident. He cannot hear a question, nor speak a single sentence, and go on with his play at the same time. If a question be asked, he stops, looks up, hears, answers, and then perhaps collects his thoughts, and again proceeds with his game as [Pg 135] before; but for a long time he cannot even hear, far less speak, and play at the same moment. When a child is able to do this, it is a good sign of his having acquired considerable mental powers.

The excitement of play, we have said, is one chief means which Nature employs for the cultivation of this faculty, and it is peculiarly worthy of attention by the Educationist. Every one must have observed the strong desire which children have, during their more exhilarating games, to exercise their lungs by shouting, and calling out, and giving direction, encouragement, or reproof, to their companions. In all these instances, the impetus of their play is not apparently stopt while they speak, and every time that this takes place, they are promoting their mental, as well as their physical health and well-being. The accuracy of this remark is perhaps more conspicuous, although not more real, in the less boisterous and more placid employment of the young. The lively prattle of the girl, while constructing her baby-house; her playful arrogation of authority and command over her playmates, and her serio-comic administering of commendation or reproof in the assumed character of "mistress" or "mother," are all instances of a similar kind. A little attention to the matter will convince any one, that every sentence uttered by a child while dressing a doll, or rigging a ship, or cutting a stick, is really intended and employed by Nature in advancing this great object. And we cannot help remarking, that the irksome silence so frequently enjoined upon children during their play, or during any species of active employment, is not only harsh and unnecessary, but is positively hurtful. It is in direct opposition both to the design and the practice of Nature. It is obstructing, or at least neglecting the cultivation and the developement of powers, which are destined to be a chief ornament of life; a source of honour [Pg 136] and enjoyment to the pupil himself, and ultimately a great benefit to society.

The cultivation of this faculty in adults, after they have emancipated themselves from the discipline of Nature, is advanced or retarded by the use or neglect of similar means. Accordingly we find, that in every instance where the powers of the mind are actively, (not mechanically) employed, while the individual is at the same time called on to exercise his powers of speech and hearing on something else, this faculty of extemporaneous speaking is cultivated, and rendered more easy and fluent. Whereas, on the contrary, the most extensive acquaintance with words, even when combined with much knowledge, has but little influence in making a ready speaker. Many of the most voluble of our species have but a very scanty vocabulary, and still less knowledge; while men of extensive and profound learning, whose habits have been formed in the study, are often defective even in common conversation, and utterly unable to undertake with success the task of public extemporaneous speaking. From this cause it is, that some of our ablest men, and our greatest scholars, are necessitated to read that which they dare not trust themselves to speak; while others, by a different practice, and perhaps with fewer real attainments, feel no difficulty in arranging their ideas, and delivering them at the same time with ease and fluency. Hence it is also, that travelling, frequent intercourse with strangers, debating societies, and above all, forensic pleadings, sharpen the faculties, and give an ease and accuracy in thinking and speaking, which are but rarely acquired in the same degree in any other way.

There is one particular feature in this department of Nature's teaching, which is of so much importance both to the young and to adults, that it ought not to be passed over without notice. It is the important fact, that the highest attainments in this valuable accomplishment are within the [Pg 137] reach of almost every individual pupil, by a very moderate diligence in the use of the proper means. The counterpart of this is equally true; for without culture, either regular or accidental, no portion of it can ever be acquired. This is abundantly proved both by experience and analogy. Experience has shewn, that in every case, perseverance alone, often without system, has made great and powerful speakers; and the analogy between the expression of our feelings by *words* and by *music*, shews what proper training may do in both cases. Every one will admit that it is easier to give expression to our feelings by the natural organs of speech, than by the mechanical use of a musical instrument; and if by making use of the proper means, and with a moderate degree of diligence and perseverance, every man can be trained to play dexterously on the violin, or the organ, and at the same moment maintain a perfect command over the operations of his mind,—we may reasonably conclude, from analogy, that with an equal, or even a smaller degree of diligence, when the means have been equally systematized, the most humble individual may be trained to manage the operations of his mind, while he is otherwise making use of his *tongue*, as the other is of his *fingers*.

But the opposite of this, as we have stated above, is equally true. For, although a man may, by diligence and perseverance, attain a high degree of perfection in the exercise of this faculty; yet, even the lowest must be procured by the use of means. The art of thinking and speaking different

ideas at the same time, as we have proved, is not an instinctive, but is wholly an acquired faculty, and must be attained by exercise wherever it is possessed. We have instanced as examples the case of the girl having at first to stop while dressing her doll, and the boy while rigging his ship; but what we wish to notice here is, that the principle is not peculiar to children, whose ideas are few, and whose language is imperfect, but applies equally to adults, even of superior attainments, [Pg 138] and well cultivated minds. We have in part proved this by the frequent defects of even learned men in conversation; but there is good reason to conclude, that even these defects would have been greater, if the few opportunities they have improved had been less numerous. In short, it appears, that the successful uttering of but two consecutive words, while the mind is otherwise engaged, must be acquired even in the adult, by education or by discipline. This important fact in education, might be demonstrated by numerous proofs, deduced from acts which are commonly understood to depend altogether on habit, and where the mind is obviously but little engaged. We shall take the case already supposed, that of the fingering of musical instruments. The rapidity with which the fingers in this exercise perform their office, would lead us to pronounce it to be purely mechanical, and to suppose that the mind was at perfect liberty to attend to any of the other functions of the body, during the performance. But this is not the case; for although by long practice, the operator has acquired the art of *thinking* upon various other subjects while playing, he finds upon a first trial, that he is then totally unable to articulate two words in succession. Here then is a case exactly parallel with that of the children who had to stop to speak during their play; proving that it does not arise from the lack of ideas, or a deficiency in words, but purely from want of discipline and practice; because many musicians by practice, and by practice alone, overcome the difficulty, and become able both to speak and to play at the same time.

There is another circumstance connected with this part of our subject, which is worthy of remark. A person who is playing on an instrument, and who is desirous to speak, finds himself, without long practice, totally unable to do so; but he may, if he pleases, sing what he has to say, provided only that he modulate his voice to the tune he is playing. The reason of this appears to [Pg 139] be two-fold; first, that the mind, by following the tune in the articulation of the words, is relieved in a great measure from doing double duty; and secondly, and chiefly, because the person has already acquired, by more or less practice, the faculty of singing and playing at the same time. From this illustration, we perceive the necessity that exists in education, of cultivating in the young, by direct means and special exercises, this important faculty of managing the thoughts and giving expression to them at the same moment. It must be acquired by a course of mental discipline, which brings all the elements of the principle into operation; the collecting and managing of ideas, the chusing and arranging of words, and the giving of them utterance, at the same time. That direct exercises of this kind are necessary for the purpose, is obvious from the illustrations here given; where we find, that although a person, while playing on an instrument, may sing his words, he is yet unable to make the slightest deviation from singing to speaking, without a long and laborious practice.

Here then we have been enabled to trace this supplementary process of Nature in the education of her pupils, and to detect the great leading principle or law, by which it is governed. The attainment itself is the ready and fluent communication of our ideas to others; and the mode employed by nature for arriving at it, appears to be the training of her pupils to exercise their minds upon one set of ideas, while they are giving expression to another. That the mind is actually engaged in two different ways, at the same moment of time, it is not necessary for us to suppose. It is sufficient for our purpose, that the operations so rapidly succeed each other, as to appear to do so. The ability to accomplish this, we have proved to be in every case an acquired habit, and is never possessed, even in the smallest degree, without effort. It is, in fact, the invariable result of exercise and education. The most gifted of our species are frequently [Pg 140] destitute of it; while very feeble minds have been found to possess it, when by chance or design they have employed the proper means for its attainment. What is wanted by the Educationist therefore, is an exercise, or series of exercises, which will enable him to imitate Nature, by causing his pupil to employ his mind in preparing one set of ideas, while he is giving expression to another. Such an exercise, upon whatever subject, will always produce, in a greater or less degree, the effect which Nature by this supplementary process intends to accomplish; that of giving the pupil ease and fluency in conversation, and a ready faculty of delivering his sentiments; while we have seen, by numerous illustrations, that it is at least highly improbable that it ever can be acquired in any other way. We have also demonstrated the impropriety of all unnecessary artificial restrictions upon children while at their play, and of preventing their speaking, calling out, and giving orders, encouragement, or commendation to their companions during it. These illustrations and examples have also pointed out to us the importance of encouraging the young to speak or converse with their teachers or one another, while they are actively employed at work, in their amusements, or in any other way in which the mind is but partially engaged. Exercises of this kind in the domestic circle, where they could be more frequently resorted to, would be of great value in forwarding the mental capacities of the young, and might be at least equally and extensively useful, as similar exercises employed in the school. The consideration of suitable exercises for advancing these ends, by which Nature may be successfully imitated in this important part of her process, belongs to another department of this Treatise, to which accordingly we must refer.

**FOOTNOTES:**

[8] Note G.

[Pg 141]

## CHAP. XII.

### *Recapitulation of the Philosophical Principles developed in the previous Chapters.*

Before proceeding to the third and more practical part of this Treatise, it will be of advantage here, shortly to review the progress we have made in establishing the several educational principles, exhibited in the operations of Nature, as it is upon these that the following practical recommendations are to be entirely founded. In doing this, we would wish to press upon the attention of the reader the important consideration, that however much we may fail in what is to *follow*, the principles which we have *already ascertained*, must still remain as stationary landmarks in education, at which all future advances, by whomsoever made, must infallibly set out. The previous chapters, therefore, in so far as they have given a correct exposition of Nature's modes of teaching, must constitute something like the model upon which all her future imitators in education will have to work. There may be a change of *order*, and a change of *names*, but the principles themselves, in so far as they have been discovered, will for ever remain unchanged and unchangeable.—It is very different, however, with what is to *follow*, in which we are to make some attempts at imitation. The principles which regulate the rapid movements of fish through water is one thing; and the attempt to imitate these principles by the ship-builder is quite another thing. The first, when correctly ascertained, remain the unalterable standard for every future naval architect; but the attempts at imitation will change and improve, as long as the minds of men are directed to the perfecting of ship-building. In like manner, the various facts in the educational processes of Nature, in so far as they have been correctly ascertained in the previous part of this Treatise, must form the unalterable basis for every future improvement in [Pg 142] education. These facts, or principles, will very probably be found to form only a part of her operations;—but as they do really form *a part*, they will become a nucleus, round which all the remaining principles when discovered will necessarily congregate. We shall here therefore endeavour very shortly to recapitulate the several principles or laws employed by Nature in her academy, so far as we have been able to detect them; as it must be upon these that not only we, but all our successors in the improvement of education, must hereafter proceed.

We have seen in a former chapter, that the educational processes of Nature divide themselves distinctly into four different kinds. *First*, the cultivation of the powers of the mind:—*Second*, the acquisition of knowledge:—*Third*, the uses or application of that knowledge to the daily varying circumstances of the pupil:—and *Fourth*, the ability to communicate this knowledge and experience to others.

The *first* department of Nature's teaching, that of cultivating the powers of her pupil's mind, we found to depend chiefly, if not entirely, upon one simple mental operation, that of "reiterating ideas;" and from numerous examples and experiments it has been shewn, that wherever this act of the mind takes place, there is, and there must be, mental culture; while, on the contrary, wherever it does not take place, there is not, so far as we can yet perceive, the slightest indication that the mind has either been exercised or benefited.

The *second* department of Nature's teaching, we have seen, consists in inducing and assisting her pupils to acquire knowledge.—This object we found her accomplishing by means of four distinct principles, which she brings into operation in regular order, according to the age and mental capacity of the pupil. These we have named the principle of "Perception and Reiteration," [Pg 143] which is the same as that employed in her first process;—the principle which we have named "Individuation," which always precedes and prepares for the two following;—there is then the principle of "Association," or "Grouping," by which the imagination is cultivated, and the memory is assisted;—and there is, lastly, the principle of "Classification," or "Analysis," by which all knowledge when received is regularly classified according to its nature; by which means the memory is relieved, the whole is kept in due order, and remains constantly at the command of the will.—These four principles, so far as we have yet been able to investigate the processes of Nature, are the chief, if not the only, means which she employs in assisting and inducing the pupil to acquire knowledge; and which of course ought to be employed in a similar way, and in the same order, by the teacher in the management of his classes.

The *third*, and by far the most important series of exercises in Nature's academy, we have ascertained, by extensive evidence, to be the training of her pupils to a constant practical application of their knowledge to the ordinary affairs of life.—These exercises she has separated into two distinct classes; the one connected with the physical and intellectual phenomena of our nature, and which is regulated by what we have termed the "animal, or common sense;" and the other connected with our moral nature, and regulated by our "moral sense," or conscience. In both of these departments, however, the methods which Nature employs in guiding to the practical application of the pupil's knowledge are precisely the same, consisting of a regular

gradation of three distinct steps, or stages. These steps we have found to follow each other in the following order. There is always first, some fundamental truth, or idea—some definite part of our knowledge of which use is to be made;—there is next an inference, or lesson, drawn from that [Pg 144] idea, or truth;—and there is, lastly, a practical application of that lesson, or inference, to the present circumstances of the individual. This part of Nature's educational process,—this application, or use of knowledge, we have ascertained and proved to be the great object which Nature designs by *all her previous efforts*. This part of her work, when completed, forms in fact the great Temple of Education,—all the others were but the scaffolding by which it was to be reared.—This is the end; those were but means employed for attaining it. In proof of this important fact we have seen, that when this object is successfully gained, all the previous steps have been homologated and confirmed; whereas, whenever this crowning operation is awanting, all the preceding labour of the pupil becomes useless and vain, his knowledge gradually melts from the memory, and is ultimately lost.

The *fourth*, or supplementary process in this educational course as conducted by Nature, we found to consist in the training of her pupils to an ability to communicate with ease and fluency to others the knowledge and experience which they themselves had acquired.—This ability, as we have shewn, is not instinctive, but is in every instance the result of education. It is not always the accompaniment of great mental capacity; nor is it always at the command of those who have acquired extensive knowledge. Persons highly gifted in both respects, are often greatly deficient in readiness of utterance, and freedom of speech. On careful investigation we have seen, that it is attained only by practice, and by one simple exercise of the mental powers, in which the thoughts are engaged with one set of ideas, at the same moment that the voice is giving expression to others. This faculty has been found to be eminently social and benevolent, and intended, not so much for the benefit of the individual himself as for the benefit of society. Nature, accordingly, constrains mankind to do homage to eloquence when it is employed for others, or for the public; [Pg 145] —but strongly induces them to look with pity or contempt on the person who is always speaking of or for himself. These facts accordingly have led us to the important conclusion, that learning and the possession of knowledge are not intended merely for the person himself, but for the good of society; and therefore, that education in every community ought to be conducted in such a manner, that the attainments of each individual in it, shall either directly or indirectly benefit the whole.

In these several departments of our mental constitution, and in the principles or laws by which they are carried on, we have the great thoroughfare,—the highway of education,—marked out, inclosed, and levelled by Nature herself. Hitherto, in our examination of the several processes in which we find her engaged, we have endeavoured strictly to confine ourselves to the great general principles which she exhibits in forwarding and perfecting them. We have not touched as yet on the methods by which, in our schools, they may be successfully imitated; nor have we made any enquiry into the particular truths or subjects which ought there to be taught. These matters belong to another part of this Treatise, and will be considered by themselves. And it is only necessary here to observe, that as it is the *use* of knowledge chiefly which Nature labours to attain, it is therefore *useful knowledge* which she requires to be taught. This is a principle so prominently held forth by Nature, and so repeatedly indicated and enforced, that in the school it ought never for an hour to be lost sight of. The whole business of the seminary must be practical; and the knowledge communicated must be useful, and such as can be put to use. If this rule be attended to, the knowledge communicated will be valuable and permanent;—but if it be neglected, the pretended communications will soon melt from the memory, and the previous [Pg 146] labours of both teacher and pupil will be in a great measure lost.

The existence of these several principles in education has been ascertained by long experience and slow degrees;—and the accuracy of the views which we have taken of them, has been rigorously and repeatedly tested. No pains has been spared in projecting and conducting such experiments as appeared necessary for the purpose; and it has been by experience and experiment alone that their efficiency has been established. Many of these experiments were conducted in public,—some of them have for years been in circulation,—and the decisiveness of their results has never been questioned. The several principles in education which it was the object of these experiments to ascertain, are here for the first time, collected and exhibited in their natural order; and they are now presented to the friends of education with some degree of confidence. Judging historically, however, from the experience of others in breaking up new ground in the sciences, there is good reason to believe, that the present Treatise goes but a short way in establishing the science of education. There is yet much to be done; and others, no doubt, will follow to complete it. But if confidence is to be placed in history, it appears evident, that they must follow in the same course, if ever they are to succeed. Nature is our only instructress; and however much she may have hitherto been neglected, it is only by following her leadings with a child-like docility, that improvement is ever to be expected. By so following, however, success is certain. The prospects of the science at the present moment, both as to its spread and its improvement, are exceedingly cheering. The field, which is now being opened up for the labours of the Educationist, is extensive and inviting; and the anticipations of the philanthropist become the more delightful, on account of the improvements likely to ensue for carrying on the work. The [Pg 147] errors and failings of former attempts will warn, while every new discovery will direct in the labour. The virgin soil has even yet in a great measure to be broken up; and if we shall be wise enough to employ the implements provided for us by Nature herself, the present generation may yet witness a rapid and abundant ingathering of blessings for the world. This is neither a hasty nor a groundless speculation. There are already abundant proofs to warrant us in cherishing it. Numerous patches of ground have again and again, under serious disadvantages, been partially

cultivated; and each and all have invariably succeeded, and produced the first fruits of a ripe, a rich, and an increasing harvest.

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[Pg 148]

# PART III.

## ON THE METHODS BY WHICH THE EDUCATIONAL PROCESSES OF NATURE MAY BE SUCCESSFULLY IMITATED.

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### CHAP. I.

### *On the Exercises by which Nature may be imitated in cultivating the Powers of the Mind.*

In the educational processes of Nature, her first object appears to be the cultivation of her pupil's mind; and this, therefore, ought also to be the first concern of the parent and teacher.—The wisdom of this arrangement is obvious. For as success in a great measure depends upon the vigour and extent of those powers, their early cultivation will render the succeeding exercises easy and pleasant, and will greatly abridge the anxiety and labour of both teacher and scholar.

There is no doubt a great diversity in the natural capacities of children; and phrenology, as well as daily experience shews, that children who are apt in learning one thing, may be exceedingly dull and backward in acquiring others. But after making every allowance for this variety in the intellectual powers of children, it is well established by experience, and repeated experiments have confirmed the fact,[9] that the very dullest and most obtuse of the children found in any of our schools, are really capable of rapid cultivation, and may, by the use of proper means, be very [Pg 149] soon brought to bear their part in the usual exercises fitted for the ordinary children. A large proportion of the dulness so frequently complained of by teachers arises, not so much from any natural defect, or inherent mental weakness in the child, as from the want of that early mental exercise,—real mental culture,—of which we are here speaking. Whenever this dulness in a sane scholar continues for any length of time, there is good reason to fear that it is owing to some palpable mismanagement on the part of the parent or teacher. On examination it will most likely be found, either that the pupil has had exercises prescribed to him which the powers of his mind were as yet incapable of accomplishing; or, if the exercises themselves have been suitable, there has been more prescribed than he was able to overtake. In either case the effect will be the same. The mind has been unnaturally burdened, or overstretched; confusion of ideas and mental weakness have been the consequence; and if so, the very attempt to keep up with his companions in the class only tends to aggravate the evil. Hence arises the propriety of following Nature in making the expansion and cultivation of the powers of the mind our first object; and our design in the present chapter is to examine into the means by which, in the exercises of the school, she may be successfully imitated in the operations which she employs for this purpose.

We have in our previous investigations seen, that the cultivation of the mental powers is a work of extraordinary simplicity, depending entirely upon one act of the mind,—the reiteration of ideas. We have proved, by a variety of familiar instances, that wherever this act takes place, the mind is, and must be exercised, and so far strengthened; while, on the contrary, wherever it does not take place, there is neither mental exercise, nor any perceptible accession of mental strength. It does not depend upon the particular form of the exercise, whether it consists of reading, [Pg 150] hearing, writing, or speaking; but simply and entirely upon the reality and the frequency of the reiteration of the included ideas during it. This makes the cultivation and strengthening of the powers of the mind a very simple and a very certain operation. For if the teacher can succeed by any means in producing frequent and successive repetitions of *this act* of the mind in any of his pupils, Nature will be true to her own law, and mental culture, and mental strength will assuredly follow;—but, on the contrary, whenever in a school exercise this act is awanting, there can be no permanent progression in the education of the pupil, and no amelioration in the state of his mind. The mechanical reading or repeating of words, for example, like the fingering of musical

instruments, may be performed for months or years successively, without the powers of the mind being actively engaged in the process at all; leaving the child without mental exercise, and consequently without improvement.

In following out the only legitimate plan for the accomplishment of this fundamental object, that of imitating Nature, the first thing required by the teacher is an exercise, or series of exercises, by which he shall be able *at his own will* to enforce upon his pupils this important act of the mind. If this object can be successfully attained, then the proper means for the intellectual improvement of the child are secured; but as long as it is awanting, his mental cultivation is either left to chance, or to the capricious decision of his own will;—for experience shews, that although a child may be compelled to read, or to repeat the *words* of his exercises, they contain no power by which the teacher can ensure the reiteration of the *ideas* they contain. The words may correctly and fluently pass from the tongue, while the mind is actively engaged upon something else, and as much beyond the reach of the teacher as ever. But if the desiderated exercise could be procured, the power of enforcing mental activity upon a prescribed subject [Pg 151] would then remain, not in the possession of the child, but would be transferred to the teacher, at whose pleasure the mental cultivation of the pupil would proceed, whether he himself willed it or no.

In the "catechetical exercise," as it has been called, and which has of late years been extensively used by our best teachers, the desideratum above described has been most happily and effectively supplied to the Educationist. This valuable exercise may not perhaps be new;—but certainly its nature, and its importance in education, till of late years, has been altogether overlooked, or unknown. It differs from the former mode of catechising, (or rather of using catechisms) in this, that whereas a catechism provides an answer for the child in a set form of words,—the catechetical exercise, having first *provided him with the means*, compels him to search for, to select, and to construct an answer for himself. For example, an announcement is given by his teacher, or it is read from his book. This is the raw material upon which both the teacher and the child are to work, and within the boundaries of which the teacher especially must strictly confine himself. Upon this announcement a question is founded,[10] which obliges the child, before he can even prepare an answer, to reiterate in his own mind, not the *words*,—for that would not answer his purpose,—but the several *ideas* contained in the sentence or truth announced. All these ideas must be perceived,—they must pass in review before the mind,—and from among them he must select the one required, arrange it in his own way, and give it to the teacher entirely as his own idea, and clothed altogether in his own words.

In the common method of making use of catechisms, the words of the answer may be read, or they may be committed to memory, and may be repeated with ease and fluency; while the ideas, [Pg 152] —the truths they contain,—may neither be perceived nor reiterated. In this there is neither mental exercise, nor mental improvement;—and, what is worse, without the catechetical exercise, the teacher has no means of knowing whether it be so or not. By means of the catechetical exercise, on the contrary, there can be no evasion,—no doubt as to the mental activity of the pupil, and his consequent mental improvement. Its benefits are very extensive; and in employing it the teacher is not only sure that the ideas in the announcement have been perceived and reiterated, but that a numerous train of useful mental operations must have taken place, before his pupil could by any possibility return him an answer to his questions. We shall, before proceeding, point out a few of these.

Let us then suppose that a child either reads, or repeats as the answer to a question, the words, "Jesus died for sinners."—At this point in the former mode of using a catechism, the exercise of the pupil stopped; and the parent or teacher understanding the meaning of the sentence, and clearly perceiving the ideas himself, usually took it for granted that the child also did so, or at least at some future time would do so. This was mere conjecture; and he had no means of ascertaining its certainty, however important. It is at this point that the catechetical exercise commences its operations. When the child has repeated the words, or when the teacher for the first time announces them, the mind of the child may be in a state very unfavourable to its improvement; but as soon as the teacher asks him a question founded upon one or more of the ideas which the announcement contains, and which he must answer without farther help, the state of his mind is instantly and materially changed. Hitherto he may have been altogether passive on the subject;—nay, his mind while reading or repeating the words, may have been busily engaged on something else, or altogether occupied with his companions or his play;—but [Pg 153] as soon as the teacher asks him "Who died?" there is an instant withdrawal of the mind from every thing else, and an exclusive concentration of its powers upon the ideas in the announcement. He must think,—and he must think in a certain way, and upon the specific ideas presented to him by the teacher,—before it is possible for him to return an answer. It is on this account that this exercise is so effective an instrument in cultivating the powers of the mind;—and it is to the long series of exercises which take place in this operation, that we are now calling the attention of the reader, that he may perceive how closely this exercise follows in the line prescribed by Nature, in creating occasions for the successive reiteration of different ideas suggested by one question.

When, in pursuing the catechetical exercise, a question is asked from an announcement, there is first a call upon the attention, and an exercise of mind upon the *question* asked, the words of which must be translated by the pupil into their proper ideas, which accordingly he must both perceive and understand. He has then to revert to the *ideas* (not the words) contained in the original announcement, the words of which are perhaps still ringing in his ears; and these he must also perceive and reiterate in his mind, before he can either understand them or prepare to

give an answer. At this point the child is necessarily in possession of the ideas—the truths—conveyed by the announcement; and therefore at this point one great end of the teacher has in so far been gained. But the full benefit of the exercise, in so far as it is capable of fixing these truths still more permanently on the memory, and of disciplining the mind, has not yet been exhausted. After the pupil has reiterated in his mind the ideas contained in the original sentence, or passage announced, he has again to revert to the question of the teacher, and compare it with the several ideas which the announcement contains. He has then to chuse from among them,—all of them [Pg 154] being still held in review by the mind,—the particular idea to which his attention has been called by the question;—and last of all, and which is by no means the least as a mental exercise, he has to clothe this particular idea in words, and construct his sentence in such a way as to make it both sense and grammar. In this last effort, it is worthy of remark, children, after having been but a short while subjected to this exercise, almost invariably succeed, although they know nothing about grammar, and may perhaps never have heard of the name.

But even this is not all. There has as yet been only one question asked, and the answer to this question refers to only one idea contained in the announcement. But it embraces at least three several ideas; and each of these ideas, by the catechetical exercise, is capable of originating other questions, perfectly distinct from each other, and each of which gives rise to a similar mental process, and with equally beneficial results, in exercising and strengthening the powers of the mind.

It is also here of importance to take notice of the additional benefits that arise from the multiplying of questions upon one announcement. The first question proposed from the announcement, brought the mind of the child into immediate contact with all the ideas which it contained. They are now therefore familiar to him; and he is perfectly prepared for the second, and for every succeeding question formed upon it; and he fashions the answers with readiness and zest. Every such answer is a kind of triumph to the child, which he gives with ease and pleasure, and yet every one of them, as an exercise of the mind, is equally beneficial as the first. When the teacher therefore asks, "What did Jesus do?" and afterwards, "For whom did Jesus die?" a little reflection will at once shew, that a similar mental exercise must take place at each question, in which the child has not only to reiterate the several original ideas, but must again [Pg 155] and again compare the questions asked, with each one of them, choose out the one required, clothe it in his own language, and in this form repeat it audibly to his teacher.

Before leaving this enquiry into the nature and effects of the catechetical exercise, there are two circumstances connected with it as a school-engine, which deserve particular attention. The first is, that Nature has made this same reiteration of ideas, for the securing of which this exercise is used, the chief means of conveying knowledge to the mind; and the second is, the undissembled delight which children exhibit while under its influence, wherever it is naturally and judiciously conducted. With respect to the former of these circumstances, it falls more particularly to be considered in another chapter, and under a following head; but with respect to the latter,—the delight felt in the exercise by the children themselves,—it deserves here a more close examination.

Every one who has paid any attention to the subject must have observed the life, the energy, the enjoyment, which are observable in a class of children, while they are under the influence, and subjected to the discipline of the catechetical exercise. This will perhaps be still more remarkable, if ever they have had an opportunity of contrasting this lively scene with the death-like monotony of a school where the exercise is as yet unknown. Many can yet remember instances when it was first introduced into some of the Sabbath schools in Scotland, and the astonishment of the teachers at its instantaneous effects upon the mind and conduct of their children. The whole aspect of the school was changed; and the children, who had but a few minutes before been conspicuous only for their apathy, restlessness, or inattention, were instantly aroused to life, and energy, and delight. Similar effects in some children are still witnessed; but, happily for education, the first exhibition of it to a whole school is not so common. [Pg 156] One striking proof of the novelty and extent of its effects upon the pupils, and of the vivid contrast it produced with that to which the teachers had at that time been accustomed, is afforded by the fact, that serious objections were sometimes made to its introduction, by well-meaning individuals, on account of its breaking in, as they said, upon the proper devotional solemnity of the children;—as if the apathy of languor and weariness was identical with reverence, and mental energy and joyous feelings were incompatible with the liveliest devotion. These opinions have now happily disappeared; and the catechetical exercise is not now, on that account, so frequently opposed. Christians now perceive, that by making these rough places smooth, and the crooked ways straight for the tottering feet of the lambs of the flock, they are following the best, as it is the appointed means, of "making ready a people prepared for the Lord."

To the teacher, especially, it must be a matter of great practical importance, to perceive clearly the cause why this exercise is so fascinating to the young, as well as so beneficial in education. The cause, when we analyze all the circumstances, is simply this, that it resembles, in all its leading characteristics, those amusements and pastimes of which children are so fond. In other words, the prosecution of the catechetical exercise with the young, produces in reality the same effects as a game would do if played with their teacher. It brings into action, and it keeps in lively operation, all those mental elements, which, in ordinary cases, constitute their play; and the effects of course are nearly similar. We shall direct the reader's attention to this curious fact for a moment.

It is easy to perceive, that the pleasure and happiness experienced by a child during his play,

arise altogether from the *state of his mind*, to which the physical exercises and amusements only conduce. When this mental satisfaction is examined, we find it to consist chiefly of two elements,—that of active thought, and that of self-approbation. The first,—that of active thought, or the reiteration of ideas, we have before pointed out and explained, as it is illustrated in their play, and in the pleasure they take in hearing stories, reading riddles, dressing dolls, and similar acts; and it is only here necessary to add, that their desire of congregating together for amusement has its origin in a similar cause. New ideas stimulate more powerfully to active thought; and children soon find, and insensibly draw the lesson, that the aggregate of new ideas is always enlarged by an increase of the number of persons who supply them. Two children will play with the same number of toys for a longer time, without tiring, than if they were alone;—and three or four would, in the same proportion, increase the interest and prolong the season of activity. But as soon as the reiteration of the ideas suggested by their game becomes languid or difficult, their play for the time loses its charms, and the fascination is gone. That it is the cessation of active thought, which is the chief cause of their play ceasing to please, is proved from the circumstance, that if another interesting companion shall be added to their number, or if any thing shall occur to renew this operation,—the reiteration of ideas,—upon the mind, the same degree of interest, and to a corresponding extent, is immediately felt, and the play is resumed. Now, the catechetical exercise is in reality the same operation in another form. The questions of the teacher excite the pupil to the same kind of active thought as that which gives relish to his play; and, while the teacher confines himself within the limits of the announcement, the mental excitement is active, but moderate, and always successful. [Pg 157]

This leads us to observe the influence which the catechetical exercise exerts in affording means for that self-approbation, or sense of merit, which constitutes another element of delight to a child during his play. All must have observed the beneficial effects of this principle in children, as an incitement to emulation and good conduct. It is not only perceptible in the love of approbation from their superiors, but in their desire to excel at all times. We see it in the pleasure felt by the child when he outstrips his fellows in the race,—when he catches his companion at "hide and seek,"—when he finds the hidden article at "seek and find,"—in winning a game, expounding a riddle, or gaining a place in his class. In all these instances there is a feeling of pure satisfaction and delight;—a feeling of self-estimation, which is at once the guardian and the reward of virtue. Now, when the catechetical exercise is conducted in its purity,—that is, when the teacher keeps strictly to the announcement, without wandering where the child cannot follow him,—the answers are invariably within the limits of the child's capacity;—they are answered successfully; and every answer is a subject of triumph. He has a delightful consciousness of having overcome a difficulty, deserved approbation, and made an advance in the pathway of merit. When properly conducted, therefore, the catechetical exercise becomes to the pupils a succession of victories; and it imparts all that delight, softened and purified, which he experiences in excelling his companion, or in winning a game.—These are the reasons why the catechetical exercise is so much relished by the young, and why it has succeeded so powerfully, not only in smoothing the pathway of education, but also in shortening it. [Pg 158]

From a careful consideration of all these circumstances, we are led to conclude, that the catechetical exercise does, in a superior degree, fulfil all the stipulations required for imitating Nature, in exciting to the reiteration of ideas by children, and thus disciplining and cultivating the powers of their minds. We might also have remarked, that another advantage arising from persevering in this exercise, is the arresting of the attention of the children, and successfully training them to hear and understand through life the oral communications of others;—but we hasten to consider the time and the order in which this exercise should be made use of in schools. [Pg 159]

Nature intends, that the cultivation and strengthening of the powers of the mind shall in every case precede those exercises in which their strength is to be tried. In infants and young children we perceive this cultivation and invigorating of the mind going on, long before these powers are to be taxed even for their own preservation. The child is no doubt putting them to use; but in every such case it is voluntary, and not compulsory,—a matter of choice on the part of the child, and not of necessity. The infant, or even the child, is never required to take care of itself, to clothe itself, to wash itself, or even to feed itself. To require it to do so before the mind could comprehend the nature and the design of the particular duty, would be both unreasonable and cruel. This being the case, the exercises of the nursery and the school must be regulated in a similar manner, and follow the same law. The due cultivation of the mind, like the due preparation of the soil, must always precede the sowing of the seed. If this principle in Nature be duly attended to, the seeds of knowledge afterwards cast into the soil thus broken up and prepared, will be readily received and nourished to perfection; but if the soil be neglected, both the seed and the labour will be lost, the anticipations of the spring and summer will end in delusion, and the folly of the whole proceeding will be shewn by a succession of noxious weeds, and at last by an unproductive harvest.

The evils which must necessarily result from thus running counter to Nature in this first part of her educational proceedings, may be aptly illustrated by the very common custom of beginning a child's education by teaching it to read. It would perhaps be difficult to convince many that this custom is either unnatural or improper. We shall not attempt here to *argue* the matter, but shall merely state a fact which they cannot deny, and which will answer the purpose we think much better than an argument.—To teach the art of reading was wont to require the labour of several months, sometimes years, before the perusal of a book could be managed by the child with any degree of ease,—and even then, without any thing approaching to satisfaction or pleasure. And even yet, although the error has in some measure been perceived of late years, yet the art of reading by the young, still requires several months' attendance at school, with corresponding [Pg 160]

labour to the teacher, and great irritation and unhappiness to the child. But experience has established the fact, that, by acting on the principle of previous preparation which we are here enforcing, and by calling into operation the principle of individuation formerly explained, the whole drudgery of teaching a child to read is got over in a week,—sometimes in a day; and this with much more ease and satisfaction, than could have been done by a thousand lessons while his mind was unprepared.[11]

The accumulation of labour, and the loss of precious time by this non-observance of the dictates of Nature, are in themselves serious evils; but they are not by any means so great as some others which almost invariably accompany this unnatural mode of proceeding with the young. Many who have nominally been *taught to read*, are still quite unable to *understand by reading*. Those who have heard chapters read by families in the country, "verse about," will at once understand what we here mean; and even in towns and cities where newspapers and low-priced books are more [Pg 161] numerous and more tempting, it often requires long practice before the emancipated child can read these publications so readily and intelligently as they are intended to be. It is another, and an entirely different course of learning to which he subjects himself, when he labours to acquire the capacity of understanding the words that he *reads*, as readily as the words that he *hears*. Where the inducements to this are sufficiently powerful, the ability is no doubt *at last* acquired;—but where these stimulants are awanting, the difficulty of understanding by reading has by the previous habit become so great, that reading is gradually disused, and at last forgotten.

Many are at a loss to account for this; but it is easily explained on the above principles. To teach a child to read, before his mind is capable of understanding, or of reiterating the ideas conveyed by the words he is reading, is to train him to this habit of reading mechanically;—that is, of reading without understanding. He gradually acquires the habit of pronouncing the words which he traces with the eye, while the mind is busily engaged upon something else; in the same manner that a person acquires the habit of thinking, and even of speaking, while knitting a stocking, or sewing a seam. This habit is confirmed by constant practice; and then, the difficulty of getting off the habit is all but insurmountable. This difficulty will be best understood by the experience of those who have been during some time of their life compelled to abandon a habit after it was thoroughly confirmed;—or by those who will but try the difficulty of persevering to do something with the left hand, which has hitherto been done with the right. A very little consideration will shew, that when this habit of reading mechanically has once been established, it will require, like an improper mode of holding the pen in writing, ten-fold more labour and self-denial to *remedy* the evil, than it would have taken at first to *prevent* it, by learning to do the [Pg 162] thing properly and perfectly.

Much therefore depends upon the early and persevering use of the catechetical exercise for cultivating a child's mind, before beginning to teach it the art of reading, or requiring it to make use of the powers of the mind on subjects which these powers are as yet incapable of comprehending. By proper *preliminary* exercises, the powers of the mind will be gradually expanded; ideas of every different kind, both individually and in connection with each other, will become familiar; the design of language in receiving and communicating truth will by degrees be practically understood; and, by means of the catechetical exercise, it will be gradually and successfully practised. These are obviously the means by which the present crooked ways in the child's early progress in education are to be made straight, and the rough and difficult paths which he has had so long to tread, may now be made both easy and smooth.[12]

The effects of the catechetical exercise, and its uniform beneficial results, have given sufficient evidence of its being a close imitation of Nature in this part of her educational process. Its success indeed has been invariable, even when employed by those who remained unconscious of the great principles by which that success was to be regulated. The observations and experiments employed to ascertain in some measure the extent of its efficiency, have uniformly been satisfactory, and to a few of these we shall here very shortly advert.

The first case of importance, which came under our notice, and to which we think it advisable to allude, is that of Mary L. who, about the year 1820, resided in Lady Yester's parish in Edinburgh. This girl, when her name was taken up for the Local Sabbath Schools in that parish, [Pg 163] was about seven or eight years of age, and in respect to mental capacity, appeared to be little better than an idiot. She could not comprehend the most simple idea, if it related to any thing beyond the household objects which were daily forced upon her observation, and which had individually become familiar to the senses; and was unable to receive any instruction with the other children, however young. The catechetical exercise was adopted with her, as with the other scholars; and although, for a long period, she was unable to *collect knowledge*, yet the constant discipline to which the powers of the mind were thus subjected, had the happiest effect in bringing them into tone, and at last giving her the command of them. The comprehending of a simple truth when announced, became more and more distinct, and the answering of the corresponding questions, became gradually more correct and easy. At a very early period she began to relish the exercises of the school; and although these occurred only on the Sundays, she continued rapidly to improve; till, in the course of a few years, she was able to join the higher classes of the children, and made a respectable appearance among her companions, at those times when they were submitted to examination.—When these schools were broken up, no stranger could have remarked any difference between Mary L. and an ordinary child of the same age.

A similar instance occurred more recently in the case of two sisters, (Margaret and Mary J.) the condition of whose minds originally was better, although not much, than that of Mary L. At the respective ages of six and eight years, these sisters could scarcely receive or comprehend the

simplest idea not connected with their daily ordinary affairs. For some years they had no more teaching, or regular mental exercise, than two hours weekly on the Sundays, and during that [Pg 164] period they were, in regard to mental capacity, advancing, but still nearly alike. The eldest (Margaret,) was then removed to another class, the teacher of which dedicated another evening during the week for the benefit of her scholars. The consequence of this apparently slight addition to the mental exercise of this girl soon became apparent; and in the course of a short time, the powers of Margaret's mind not only advanced beyond those of her sister's, but equalled at least those of children of the same age, who had not enjoyed similar opportunities of improvement. Her sister Mary, who continued to enjoy only the two hours on Sunday, advanced proportionally in mental strength;—and before she left the district in which the school was situated, her original incapacity could scarcely have been credited by a stranger. In proof of this, it may be added, that long after she had left the parish, the writer found her by accident in the school which she attended after removing, examined her with the other children, and made some strict and searching enquiries concerning her. The report of her teacher was exceedingly satisfactory; and, without knowing the reason of these enquiries, declared, that Mary J. was one of her best scholars. Before leaving this notice of these two children, there is a circumstance which may perhaps be worthy of recording. In Margaret's countenance there had gradually appeared, latterly, that which to a stranger gave all the ordinary indications of intellect, and rather superior intelligence; while in Mary's case, at the same period, there continued to be much of that vacancy of look, and stupid stare, indicative rather of what she was, than of what she had become. That also, however, was gradually disappearing.

We shall advert only to one other instance, less remarkable perhaps, and certainly not so decisive, on account of the shortness of the time during which the experiment was continued. In the opinion of the honourable and venerable examinators, however, it was considered as [Pg 165] sufficiently decisive, and of much public importance. Its application to prison discipline may ultimately be of value, where prisoners are confined but for short periods, and where the cultivation of the mind, and the growing capacity to receive and retain religious truth are objects of importance.

In the experiment in 1828, made before the Lord Provost, Principal, Professors, and Clergymen of Edinburgh, in the County Jail, a class of criminals which had been formed three weeks before, and exercised one hour daily, were thoroughly and individually examined without intermission during nearly three hours. Our present extract from the Report of that Experiment refers, not to the amount of knowledge acquired by these persons during these three weeks, but to the capacity which, at the end of that time, they were found to possess of acquiring every sort of knowledge. This experiment was so far imperfect, as the Examinators had no means of ascertaining the true state of their minds, previous to the commencement of their exercises. But having, upon enquiry found from the governor of the prison, that there had been no selection, that all the individuals in the ward had been taken, and that at the commencement of the experiment, they formed a fair sample of the prisoners commonly under his charge,—the progress of this mental cultivation during that short period, became a special object of examination by the Reverend and learned individuals who conducted it. Their Report of the Experiment bears, that "these individuals had been taken without any regard to their abilities, and former acquirements, and formed a fair average of the usual prisoners." In endeavouring to ascertain the grasp of mind which these individuals possessed, and the readiness with which they received and retained whatever was, even for the first time, communicated to them, "it was mentioned, that a gentlemen on the previous day, in order to try the capacity of mind which they [Pg 166] had attained, desired Mr Gall to catechise them upon a section, consisting of fourteen verses, which they had not seen before, and that, after just ten minutes' examination, one woman, who could not read, repeated the whole distinctly in her own words. Dr Brunton proposed, for a similar experiment, the parable of the 'talents,' with which none was acquainted except one woman, who was consequently not permitted to answer. With its being only read to them, and with a few minutes' catechising, they perceived its various circumstances, and were able to enumerate them in detail. This exercise demonstrated the capacity of attention, and the power of analyzing and laying hold of circumstances, which they had reached, as well as the indisputable superiority of this System, in unfolding and strengthening the mental faculties, even in adults."

"The writer of the Report," it is added, "was not acquainted with the extent of their acquirements when Mr Gall commenced his operations; but judging from the examination, and from his knowledge of the contents of the books taught, he has no hesitation in averring, that the answers which they gave, arose entirely from information communicated by them. And when he reflects that their answers, being clothed in their own words, guaranteed the fact, that it was *the ideas* upon which they had seized, and that their knowledge participated in no degree of rote, the conviction to his mind is irresistible, that the universal application of the Lesson System to Prison Discipline, and to adults everywhere, would be followed by effects, incalculably precious to the individuals themselves, and to the improving of society in general."

Numerous other instances might be adduced in proof of the efficiency of this method of attempting to imitate Nature in this first part of her educational process, who will always be [Pg 167] faithful in adhering to her own laws, and countenancing her own work. These however may suffice;—and it ought not to escape observation, that in two of the cases first alluded to, the young persons enjoyed only two hours' instruction in the week, and these not divided, but continuously given at one time. For this reason, it might have been feared, that the benefits then received would have been lost, or neutralized, by the variety of objects or amusements which must have intervened during the week between the lessons. But it was not so. And we may here remark, that if with all these disadvantages, so much good was really done in cultivating the

powers of the mind by this exercise, what may we not expect by the enlightened, regular, and daily application of the same powerful principles in our ordinary schools, when the teacher shall know where the virtue of the weapon which he wields really lies, and when the nature of the material he is called to work upon is also better understood. Every exercise and every operation in the school will then be made to "tell;" and every moment of the pupils' attendance will be improved. In these circumstances, we are far within the limits of the truth when we say, that more real substantial education will then be communicated in one month, than it has been usual to receive by the labours of a whole year.

From what has been already ascertained, we are fully warranted in making the following remarks.

1. From the above facts we can readily ascertain the cause, why some exercises employed in education are so much relished by the young, and so efficient in giving strength and elasticity to the mind; while others, on the contrary are so inefficient, so irksome, and sometimes so intolerable. Every exercise that tends to produce active thought,—the "reiteration of ideas,"—is natural, and therefore, not only promotes healthful mental vigour, but is also exciting and delightful; while, on the contrary, whenever the mind is fettered by the mere decyphering of [Pg 168] words, or the repeating of sounds, without reiterating ideas, the exercise is altogether unnatural, and must of course be irritating to the child, and barren of good.

2. By a due consideration of the above principles, we see the reason why mental arithmetic, though it may not communicate any knowledge, is yet productive of considerable mental vigour. These exercises compel the young to a species of voluntary thought, the reiteration in the mind of the powers of numbers; and although the result of the particular calculations which are then made, may never again be of any service to the pupil, yet the consequent exercise of mind is beneficial. It should never be forgotten, however, that this exercise of mind upon *numbers* is altogether an artificial operation, and is on this account, neither so efficient nor so pleasant as the reiteration of moral or physical truths. The same degree of mental exercise, brought into operation upon some useful fact, where the imagination as well as the understanding, can take a part, would at once be more natural, more efficient, more pleasant, and more useful.

3. From the nature and operation of the above principle, also, we can perceive in what the efficiency of Pestalozzi's "Exercises on Objects," consists.—When a child is required to tell you the colour and the consistence of milk, qualities which have all along been familiar to him, it conveys to him no knowledge; but it excites to observation and active thought,—to the "reiteration of ideas;"—and for this reason it is salutary. But it is still equally true, as in the former case, that the same degree of mental exercise, brought into operation upon some useful practical truth, would be at least equally useful as a mental stimulant, and much more beneficial as an educational exercise.

4. From the nature of this great fundamental principle in mental cultivation, as consisting in [Pg 169] the reiteration of ideas, and not of words, we have a key by which we can satisfactorily explain the remarkable, and hitherto unaccountable fact, that many persons who, in youth and at school, have been ranked among the dullest scholars, have afterwards become the greatest men. An active mind, in exact proportion to its vigour, will powerfully struggle against the unnatural thraldom of mere mechanical verbal exercises. The mind in a healthful state will not be satisfied with words, which are but the medium of ideas, because ideas alone are the natural food of the mind. Till the powers of the mind, therefore, are sufficiently enfeebled by time and perseverance, it will struggle with its fetters, and it will be repressed only by coercion. Minds naturally weak, or gradually subdued, may and do submit to this artificial bondage,—this unnatural drudgery; but the vigorous and powerful mind, under favourable circumstances, spurns the trammels, and continues to struggle on. It may be a protracted warfare,—but it must at last come to a close; and it is not till the pupil has emerged from this mental dungeon, and has had these galling fetters fairly knocked off, that the natural elasticity and strength of his mind find themselves at freedom, with sufficient room and liberty to act. The impetus then received, and the delight in the mental independence then felt, have frequently led to the brightest results. Hence it is, that the reputed dunce of the school, has not unfrequently become the ornament of the senate.

Lastly, we would remark, that from the facts here enumerated, we derive a good test by which to try every new exercise proposed for training the young, and for cultivating the powers of the mind. If the exercise recommended compels the child to active thought,—to the voluntary exercise of his own mind upon useful ideas,—that exercise, whatever be its form, will, to that extent at least, be beneficial. And if, at the same time, it can be associated with the acquisition of [Pg 170] knowledge, with the application of knowledge, or with the ready communication of knowledge,—all of which, as we have seen, are concomitants in Nature's process,—it will, in an equal degree, be valuable and worthy of adoption. But if, on the contrary, the exercise may be performed without the necessity of voluntary thought, or the reiteration of ideas by the mind, however plausible or imposing it may appear, it is next to certain, that although such an exercise may be sufficiently burdensome to the child, and cause much labour and anxiety to the teacher, it will most assuredly be at least useless, if not injurious.

**FOOTNOTES:**

[9] See the Fifth Public Experiment in Education, conducted before Sir Thomas Kirkpatrick, and the clergy and teachers of Dumfries, in the month of October 1833.

[10] Note K.

[11] Note H.

[12] For the methods of employing this exercise and the books best adapted for it, see Note I.

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## CHAP. II.

### *On the Methods by which Nature may be imitated in the Pupil's Acquisition of Knowledge; with a Review of the Analogy between the Mental and Physical Appetites of the Young.*

The second step in the progress of Nature's pupil is the acquisition of knowledge.—This has always been considered a chief object in every system of education; and the discovery of the most efficient means by which it may be accomplished, must be a matter of great importance.

In our remarks upon this subject in a previous chapter, we have shewn, that Nature in her operations employs four distinct principles for accumulating knowledge, for retaining it upon the memory, and for keeping it in readiness for use at the command of the will. There are, *First*, the "reiteration of ideas" by the mind, without which there can be no knowledge; *Secondly*, the principle of "Individuation," by which the knowledge of objects and truths is acquired one by one; *Thirdly*, the principle of "Grouping," or Association, in which the mind views as one object, what [Pg 171] is really composed of many; and, *Fourthly*, the principle of "Analysis," or Classification, in which the judgment is brought into exercise, the different portions of our knowledge are arranged and classified under different heads and branches, and the whole retained in order at the command of the will, when any portion of it is required.—Our object now is to consider, what means are within the reach of the parent and the teacher, by which Nature in these several processes may be successfully imitated, while they endeavour to communicate the elements of knowledge to the young.

Ideas being the only proper food of the mind, Nature has created in the young an extraordinary appetite and desire for their possession. There is a striking analogy in this respect, between the strengthening of the body by food, and the invigorating of the mind by knowledge; and before proceeding to detail the methods by which the parent or the teacher may successfully break down and prepare the bread of knowledge for their pupils in imitation of Nature, it will be of advantage here to consider more particularly some of the circumstances connected with this instructive analogy. By tracing the likeness so conspicuously held out to us in this analogy by Nature herself, we shall be greatly assisted in evading the bewildering and mystifying influence of prejudice, and the reader will be much better prepared to judge of the value of those means recommended for nourishing and strengthening the mind by knowledge, when he finds them to correspond so exactly with similar principles employed by Nature for the nourishing and strengthening of the body by food. We shall by this means, we hope, be able to detect some of those fallacies which have long tended to trammel the exertions, and to prevent the success of the teacher in his interesting labours.

The first point of analogy to which we would advert, is the vigour and activity of the mental [Pg 172] appetite in the young, which corresponds so strikingly with the frequent and urgent craving of their bodily appetite for food.—The desire of food for the body, and the desire of knowledge for the mind, are alike restless and insatiable in childhood; and a similar amount of satisfaction and pleasure is the consequence, whenever these desires are prudently gratified. That the desire for knowledge in the young is often weakened, and sometimes destroyed, is but too true; but this is the work of man, not of Nature. It will accordingly be found on investigation, with but few exceptions, that wherever the general appetite of the child, either for mental or bodily food, becomes languid or weak, it is either the effect for disease or of some grievous abuse.

Another point of analogy consists, in the necessity of the personal active co-operation of the child himself in receiving and digesting his food.—There is no such thing in Nature as a child being fed and nourished by proxy. His food must be received, digested, and assimilated by his own powers, and by the use of his own organs, else he will never be fed. In the same way, the food for his mind can benefit him only in so far as he himself is the active agent. He must himself receive, reiterate in his own mind, and commit to the keeping of his memory, every idea presented to him by his teacher. No one can do this for him;—he must do it himself. In a family, the parent may provide, dress, and communicate the food to the child,—but he can do no more; and similar is the case with respect to the mental food provided by the teacher. He may no doubt select the most appropriate kinds,—he may simplify it,—he may break it down into morsels;—but his pupils, if they are to learn, must learn for themselves. When a pupil, to save himself trouble, tries to evade the learning of a preliminary lesson, or when the teacher winks at the evasion by performing the exercise for him, it is as absurd as for a parent to eat the child's food, and expect [Pg 173] at the same time that his boy is to be nourished by it. If the mental food be too strong for the

child, something more simple must be provided for him; but to continue to administer knowledge which the pupil does not comprehend, and force the strong mental food of an adult upon the tender capacities of a child, is an error of the most mischievous kind. It prevents the mind from acting at all, without which there can be no improvement. The mind must wield its own weapons if ignorance is to be dislodged; and if the child is to advance at all, he must overcome the difficulties that lie in his way by the exertion of his own powers. His teacher may no doubt direct him as to the best and the easiest way of accomplishing his object; but that is all. The pupil must in every case perform the exercise for himself.

This leads us to notice another point of analogy in this case, which is, the necessity of adapting the food to the age and capacities of those who are to receive it.—There is in the mental, as well as in the physical nourishment provided for our race, milk for the weak, as well as meat for the strong; and it is necessary in both cases that the kind and the quantity be carefully attended to. In the case of the strong, there is less danger; because, with regard both to the mental and bodily food, Nature has so ordered matters, that the food which is best adapted for the weak, will also nourish the strong; but the food adapted for the strong is never suitable, and is often poisonous to the weak. There must therefore be, in all cases where the young are concerned, as careful a selection of the mental food, as there is of the food for the body; and the parent or teacher should, in all cases, present only such subjects, and such ideas to his pupils, as the state of their faculties, or the progress of their knowledge, enables them to understand and apply.

Another striking point of analogy between mental and bodily nourishment, is to be found in the [Pg 174]
effects of repletion, when too great a quantity of food is communicated at one time.—As the increase of a child's bodily strength does not depend upon the mere quantity of food forced into his stomach, but upon that portion only which is healthfully digested and assimilated; so in like manner, the amount of a child's knowledge will not correspond to the number of ideas forced upon his attention by the teacher, but to those only which have been reiterated by the mind, and committed by that process to the keeping of the memory. In both cases, the evil of repletion is two-fold; there is the waste of food and of labour, while the strength and the growth of the child, instead of being promoted, are retarded and diminished. The physical appetite gains strength, by moderate exercise; but it is palled and weakened by every instance of repletion. The desire for food is never for any length of time at rest, so long as the stomach is kept in proper tone by moderate and frequent feeding; and the quantity of food which a healthy child will in these circumstances consume, is often surprising. But whenever the stomach is gorged, then restlessness, uneasiness, and not unfrequently disease, are the consequences. The digestive powers are weakened, the tone of the stomach is relaxed, and, instead of the healthful craving for food which should occur at the proper interval, the appetite is destroyed, and food of every kind is nauseated.—Exactly similar is the case with the mental appetite. The natural curiosity of children, or, in other words, their desire of information, before it is checked or overloaded by mismanagement, is almost insatiable; and the astonishing amount of knowledge which they usually acquire between the ages of one and three years, while under the guidance of Nature, has been formerly alluded to. But this desire of information, and this capacity for receiving it, are by no means confined to that early period of their lives. The same appetite for knowledge would [Pg 175]
increase and acquire additional strength, were it but properly directed, or furnished with moderate and suitable means of gratification. But when a parent or teacher impatiently attempts to force it upon the child more rapidly than he can receive it,—that is, than he can reiterate it in his mind for himself,—he not only irritates and harasses the child, but his attempt neutralizes the effect of the ideas which the child would otherwise pleasantly and efficiently have received. Every such attempt to do more than enough greatly weakens the powers of the pupil's mind, and discourages him from any after attempt to increase his knowledge.

As a general maxim in the education of the young, it may here be observed, that as long as the understanding of a child remains clear, and he can distinctly perceive the truths which are communicated to him, he will find himself pleasantly and profitably employed, and will soon acquire a habit of distinct mental vision;—the powers of his mind will be rapidly expanded and strengthened, and he will receive and retain the knowledge communicated to him with ease and with pleasure. But when, on the contrary, he is overtasked, and more ideas are forced upon his attention than his capacity can receive, the mind becomes disturbed and confused, the mental perception becomes cloudy and indistinct, and all that is communicated in these circumstances is absolutely lost. If the parent or teacher insists on the pupil persevering in his mental meal, in the hope that things will get better, we can easily, from the present analogy, perceive the fallacy of such a hope. Perseverance will only create additional perplexity; the whole powers of the child's mind will become more and more enfeebled, or totally prostrated; the labour of the teacher will be lost; and he will find his pupil now, and for some time afterwards, much less able to take a [Pg 176]
clear and distinct view of any subject than he was before.

There is yet one other point of analogy between the supply of food for the body and the mind, to which we must also allude. It is to be found in the baneful, and often destructive, effects of unnatural stimulants applied to the mental appetite, which strikingly correspond in their effects to the pernicious habit of supplying stimulants to the young in their ordinary food.—Stimulants will no doubt, in both cases, produce for the time additional excitement;—but they are neither natural nor necessary. In all ordinary cases, Nature has made ample provision for the supposed want, of which the craving—the natural and healthy craving—of children for knowledge and for food, gives ample testimony. To counteract or to weaken this natural desire would be improper;—but artificially to *increase* it is always dangerous. The reason is obvious; for the excitement thus caused being unnatural, it is always temporary; but its pernicious effects very soon become extensive and permanent. Every physician knows, that the habitual use of stimulants in the food

of the young, weakens the tone of the stomach, palls the appetite, creates a disrelish for plain and wholesome food, and frequently destroys the powers of digestion for ever after. Very similar are the effects of unnatural stimulants to the mental appetite in training and teaching the young, when these stimulants are habitually, or even frequently administered. Their curiosity,—their appetite for knowledge,—is naturally so vigorous, that the repetition, or the reading of any story, however commonplace or uninteresting to us, gives them the sincerest pleasure, provided only that they understand and can follow it. This is a most wise and beneficent provision of Nature, of which parents and teachers should be careful to take advantage. It is because of this disposition in children, that in all ordinary cases, the simplest narrative or anecdote in ordinary life, may be [Pg 177] successfully employed in giving them mental strength, and in communicating permanent moral instruction. But whenever unnatural and injudicious excitements are used in their instruction, and the child's imagination has been stimulated and defiled by the ideas of giants and ogres, fairies and ghosts, the whole natural tone of the mind is destroyed, plain and even interesting stories and narratives lose their proper attraction, and a diseased and insatiable appetite for the marvellous and the horrible is generally created. Even to adults, and much more to children, whose minds have been thus abused, the plain paths of probability and truth have lost every charm; and the study of abstract but useful subjects becomes to them a nauseous task—an intolerable burden.

The accuracy of this analogy, we think, will readily be admitted by all. And if so, it will at least help to illustrate, if it does not prove, some of the important conclusions to which we shall find ourselves led upon other, and philosophical grounds. But as the prejudices which, during several centuries, have been gradually congregating around the science of education are so many and so powerful, every legitimate means, and this among others, should be combined for the purpose of removing them.

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## CHAP. III.

### *How Nature may be imitated in Communicating Knowledge to the Pupil, by the Reiteration of Ideas.*

The phenomenon in mechanics and natural philosophy, which is popularly termed "Suction," may be exhibited in a thousand different ways, and yet all are the result of but one cause. When we witness the various phenomena of the air and common pump,—the barometer and the cupping glass,—the sipping of our tea, and the traversing of an insect on the mirror or the roof,— [Pg 178] the operations appear so very dissimilar, that we are ready to attribute them to the action of a variety of agents. But it is not so;—for when we trace each of them back to its primitive cause, we find that each and all of these wonders are produced by the weight of the atmosphere, and *that alone*. In precisely the same manner, knowledge may apparently be communicated to the human mind in a thousand different ways; and yet, when we examine each, and trace it to its primitive cause, we find the phenomenon to be one—and *one alone*. The truth has been received and lodged with the memory,—made part of our knowledge—by *the reiteration of its idea* by the mind itself;—by an exercise of active, voluntary thought upon the knowledge thus communicated. The cause and the effect invariably follow each other both in old and young; for whenever a new idea is perceived and reiterated by the pupil,—if it should be but once,—the knowledge of the child is to that extent increased; but whenever this act of the mind is awanting, there can be no additional information received;—the increase of knowledge is found to be impossible. This appears to be a law of our Nature, to which we know of no exception.

It is also worthy of remark here, that the retention or permanence of the ideas thus committed to the keeping of the memory depends upon two circumstances. The first is, the vigour of the mental powers, or the intensity of the impression made upon them at the time of reiteration;—and the second, and certainly the principal circumstance, is the frequency of their reiteration by the mind. In evidence of the first we see, that a fall, a fright, or a narrow escape from imminent danger, although it occurred but once, and perhaps in early infancy, will be remembered through life; and in proof of the second, we find, that the scenes and circumstances of childhood being frequently and daily reiterated by the mind, at a time when it has little else to reiterate, remain [Pg 179] permanently on the memory. The object therefore most to be desired by the teacher, is an exercise, or a series of exercises, by which, in his attempts to communicate knowledge to his pupil, this act of reiteration may be secured, and if possible repeated at pleasure, for more permanently fixing on the memory the knowledge communicated.

In a former chapter we shewed, that this act of reiteration is the instrument employed by Nature for cultivating the powers of the mind as well as for communicating and impressing knowledge;—and we have also shewn that Nature in that process was successfully imitated by means of the catechetical exercise. This exercise has accordingly been found as powerful and

efficient in promoting this, her second object, as it is in the first. The success of the catechetical exercise in communicating knowledge clearly to the young, even when it is but imperfectly managed, has been extensive and uniform; but wherever its nature has been properly understood, and it has been scientifically conducted, the amount of knowledge communicated in a given time, and with a given amount of mental and physical labour, stands confessedly without a parallel in the previous history of education. Minds the most obtuse, habits of listlessness the most inveterate, and mental imbecility, bordering on idiotcy, have been powerfully assailed and overcome; and knowledge, by means of this exercise, has forced its way, and firmly secured a place for itself, in minds which previously were little more than a blank.

The causes of its success in cultivating the powers of the mind were formerly explained; but its adaptation to the communicating of knowledge is still more peculiarly striking. We shall endeavour to point out a few of these peculiarities.

Let us for that purpose suppose a teacher desirous of communicating to a child the important fact, that "God at first made all things of nothing to shew his greatness;" it must be done, either [Pg 180] by the child reading or hearing the sentence. If it be read, there is at least a chance, that the words may be all decyphered, and audibly pronounced, while the ideas contained in them have not yet reached the mind. The child may have carefully examined each word as it occurred, and may have reiterated each of them on his mind as he read them, and yet there may not be the slightest addition to his knowledge. The reiteration of *words*, as we have before explained, is not that which Nature requires, but the reiteration of *ideas*; and although we may, by substituting the one for the other, deceive ourselves, Nature will not be deceived; for unless the ideas contained in the sentence be reiterated by the mind, there can be no additional information conveyed.—The same thing may happen, if the words, instead of being read by the child, are announced by the teacher. The pupil may in that case hear the sounds; nay, he may repeat the words, and thus reiterate *them* in his mind after the teacher; but if he has not translated the words into their proper ideas as he proceeded, experience proves, that his knowledge remains as limited as before;—there has been no additional information. These cases are so common, and so uniform, that no farther illustration we think needs be given of them.

The desideratum in both these cases is, some exercise by which the child shall be compelled to translate the words into their several ideas; and by reiterating the ideas themselves, not the words which convey them, he shall be enabled at once to commit them to the keeping of the memory, and thus make them part of his knowledge. The catechetical exercise supplies this want. For if, in either case, after the words have been read or repeated, the child is asked, "What did God make?" the translation of the words into the ideas, if previously neglected, is now forced upon him, because without this it is impossible for him to prepare the answer. The ideas must be drawn from the words, and reiterated by the mind, independently of the words, before the [Pg 181] exercise can be completed. And not only must the particular idea which answers the question be extracted, but *the whole* of the ideas contained in the sentence must be reiterated by the mind, before the selection can be begun, and the choice made. It is also specially worthy of remark, that even in such a case as this, where, on the sentence being read or heard, the words alone were at first perceived, yet no sooner does the mind proceed to its legitimate object, the reiteration of the ideas which the words convey, than the words themselves are instantly lost sight of, and in one sense are never again thought of. As soon as the kernel is extracted, the shell has lost its value. The pupil having once got sight of the ideas, tenaciously keeps hold of *them*, and never once thinks again of the words, which were merely the instrument employed by Nature to convey them. When the question is asked, and he answers it, the process consists in his translating the words of the whole sentence into their several ideas, chusing out the idea which answers the question from all the others, and then in clothing that idea in words which are now entirely his own.

In all this there is a long and intricate series of mental exercises, in every one of which the mind is actively employed, and it is in this, as before explained, that the value of this exercise, in cultivating the powers of the mind, really consists. But our present business is with the acquisition of knowledge by its means; and we have to observe, that in each of the mental operations required for the answer of a single question, the ideas contained in the original sentence have repeatedly to undergo the process of reiteration; by which they are more clearly perceived, and more permanently fixed on the memory, than they otherwise could have been. Hence the value of this exercise, even in those cases where the original sentence has been at the first fully understood. This will appear obvious by tracing the mental operation of the pupil from [Pg 182] the beginning, when he has to answer the question.

There is first the understanding of the question asked at him. This must be heard and reiterated by the mind before its purport can be perceived, and all this before he can commence the proper mental operation upon the original sentence from which his answer is to be selected. He has then to review the words of the original sentence, still sounding in his ears, and to translate them into their several ideas, before he can begin to select the one required. Then comes the act of selection, having to chuse out from among all the others the special idea required as his answer; and lastly, there is the clothing of that idea in words suitable for the occasion, and the audibly pronouncing of these words as the answer required. The rapidity with which the mind passes from one part of this exercise to another, may prevent these several operations from being perceived, but it is not the less true that they must have taken place. And hence arises the value of the catechetical exercise, not only in cultivating in an extraordinary degree the mental faculties of the pupil, but in powerfully forcing information upon the mind, and permanently fixing it upon the memory for after use.

But even this does not exhaust the catalogue of benefits to be derived from the use of the catechetical exercise in communicating knowledge to the young. We have supposed only one question to have been asked by the teacher upon the original sentence, and yet we have seen that this one question has in fact in a great measure secured the understanding of the whole of the ideas contained in it. But instead of one question, the catechetical exercise has the power of originating many, each producing successively similar results, but with greater ease to the child, and with much more effect in rivetting the several ideas upon the memory. The first question, [Pg 183] when properly put, gives the pupil the command of the whole proposition; but it requires considerable mental effort in the child to recall the words, and internally to translate the ideas *for the first time*. But when this has once been done, and a second question is asked from the same sentence, the ideas being now more familiar, there is less mental labour required in preparing the answer, and there being equal success, there is of course more satisfaction. The ideas become much more clear and distinct before the mind by a second review; and the effect, in fixing the whole upon the memory, is much more powerful than it could be by means of the first. When therefore the teacher confines himself to the original sentence, and does not indulge in catechetical wanderings, the questions, "When did God make all things?" "How many things did God make?" "Of what did God make all things?" and, "Why did God make all things?" produce extensive and powerful effects. The pupil finds himself able to master each question in succession without difficulty, and the answering of each appears to him a triumph. Whoever has been in the habit of making use of this exercise in the manner explained above, must have witnessed with pleasure the life, and energy, and delight, which it invariably infuses into the scholar, giving education a perfectly different aspect from what it usually assumes in the eyes of the young, and making it even in the estimation of the pupil a formidable rival to his play. In this manner has Nature set her seal upon this exercise, as a near approximation to her own process for attaining the two preparatory objects she has in view in the education of the young; that of cultivating the powers of the mind, and that of communicating to her pupils the elements of knowledge.

This exercise has been reduced to a regular system, which has placed it more directly at the command of all who undertake the instruction of the young. By a little attention on the part of [Pg 184] parents and teachers, to a few simple rules, they may catechise upon any book, and apply the exercise to any species of knowledge whatever. We shall endeavour to explain the nature and uses of these rules.

For the purposes of this exercise, the school books of the pupil are supposed to consist of sentences, each of the principal *words* in which conveys some specific idea;—these again are combined into *clauses*, which also convey an idea;—and the combination of these clauses in a *sentence*, or *paragraph*, usually forms a complete truth. For example, the sentence, "God at first [made all things] of nothing [to shew his greatness,"] contains one great truth; but the sentence which conveys it, embodies at least two *clauses*, inclosed in brackets, while the whole is made up of *words*, each of which is the sign of an idea which may readily be separated from all the others. Now it is evident, that questions may be formed by the teacher relative to each of these three parts. He may ask a question, which shall require the *whole* truth for the answer; or one which will be answered by a *clause*; or another which is answered by a *word*.

In "revising," accordingly, where time is an object, the teacher confines himself to those general questions which bring out the *whole truth* at once, as is exemplified in the Larger and Shorter Catechisms. This is called the "Connecting Exercise," because it is employed in uniting sections together, which have previously been taught to the pupils separately, but which are necessary to be perceived also in connection. This, however, would be too limited an exercise for the purpose of directing the mind to the several parts of a truth for the first time; and therefore the teacher in those cases forms his questions chiefly upon the *clauses* in the sentence, and the other words which have some material relation to them, and this is called the "General Exercise." But even this is not enough, where the child is dull, or where healthful mental exercise is [Pg 185] required; and accordingly in that case, the teacher not only questions upon the clauses in connection with the other principal words, but he takes the *words*, of which the clauses are composed, and catechises the child upon them also. This is called the "Verbal Exercise," which has been found of great value in the teacher's intercourse with his younger classes. Upon these principles the Initiatory Catechisms and their Keys have been formed, together with the several Helps for communicating Scriptural knowledge. The success of these school books, although labouring under all the disadvantages of new instruments, imperfectly formed to work out new principles, is mainly to be attributed to the close imitation of Nature aimed at in all their exercises.

The *rule* for the parent or teacher in mastering these exercises is the same in all; it consists simply in forming the question in such a manner, as that the word, the clause, or the whole proposition, shall be required to make the answer. Sufficient explanation and examples of all this will be found in the Note.[13]

The uniform results of many experiments, have established the importance of this exercise as an instrument in communicating knowledge to the ignorant, whether young or old. We shall shortly advert to a few of the circumstances connected with these experiments, for the purpose of satisfactorily establishing this.

In an experiment made in May 1828, under the direction of the Very Rev. Dr Baird, Principal of the University of Edinburgh, before the Lord Provost, and several of the Professors and Clergymen of that city, nine adult criminals, "taken without regard to their abilities," and who, in the opinion of Governor Rose, "formed a fair average of the usual prisoners," were, in the space of three successive weeks, exercised in whole for eighteen or twenty hours. They were at the end [Pg 186]

of that time minutely examined in the Chapel of the County Jail, in the presence of the Right Honourable and Reverend Professors and Gentlemen, who formed Principal Baird's committee; and their Report of the experiment and its effects bears, that "the result of this important experiment was, in every point, satisfactory. Not only had much religious knowledge been acquired by the pupils, and that of the most substantial, and certainly the least evanescent kind; but it appeared to have been acquired with ease, and even with satisfaction—a circumstance of material importance in every case, but especially in that of adult prisoners." "The examination evidently brought out only a specimen of their knowledge, and did by no means comprise all that had been acquired by them; but, even though it had constituted the whole amount of their information, the fact that such a treasure had been amassed in three weeks is in itself astonishing. The writer of this Minute was not acquainted with the extent of their acquirements when Mr Gall commenced his operations; but judging from the examination, and from his knowledge of the contents of the books taught, he has no hesitation in averring, that the answers which they gave, arose entirely from information communicated by them. And when he reflects that their answers, being clothed in their own words, guaranteed the fact, that it was *the ideas* upon which they had seized, and that their knowledge participated in no degree of rote, the conviction to his mind is irresistible, that the universal application of the Lesson System to Prison Discipline, and to adults every where, would be followed by effects incalculably precious to the individuals themselves, and to the improving of society in general."

The efficiency of this exercise in communicating knowledge, was equally conspicuous in another experiment, conducted under the eye of the Principal, Professors, and Clergymen of [Pg 187] Aberdeen, in July 1828. The persons on whom this experiment was made, were children taken from the lower classes of society, carefully selected on two several days, by a committee of clergymen appointed for the purpose, from the various schools in the city. These children were all carefully and individually examined in private by the committee, and were chosen from among their companions, not on account of their natural abilities, or educational acquirements, but specially and simply on account of their ignorance. The precautions taken by the Rev. and learned examinators, to secure accuracy in their ultimate decision, were at once judicious and complete; and were intended to enable them to say with confidence at the close of the experiment, that the results, whatever they might be, were really the effects of the exercise and discipline to which the children during it had been subjected, and were in no respect due to the previous capacity or the attainments of the children.

To secure this important preliminary object, therefore, the sub-committee of clergymen above alluded to was appointed, as soon as the experiment was determined upon, with instructions to collect a class of the most ignorant children they could find, attending the several schools, and who it was thought would be, of course, most incapacitated for receiving instruction. This sub-committee, consisting of the Rev. John Murray, the Rev. Abercromby L. Gordon, and the Rev. David Simpson, in their previous Report, say, "We, on two several days, met with the children which were collected from the various schools, and examined them individually, and apart from each other; avoiding every appearance of formality, and endeavouring to draw them into familiar conversation, that we might correctly ascertain the state of their religious knowledge on the three following points, which we considered to be the best criterion by which to judge of their [Pg 188] understanding of the other less important points in the gospel scheme of salvation.—These points were, 1. Our connection, as sinners, with Adam; 2. Our connection with Christ as the Saviour; 3. The means by which we become interested in the salvation of Christ. On minutely examining each child on these points, one by one, and endeavouring, by varied and familiar language and cross-questioning, without confusing their ideas, to ascertain the knowledge which they possessed on these first principles, we accurately, and at the time, minuted the result, distinguishing those points which they understood, and those which they did not. From this list we afterwards selected twenty-two names, of children who appeared from the list, to be the most ignorant, by *not having any marks of approval on any one of these points* on which they were examined;—although delicacy to the children, as well as to their parents and teachers, prevented us from stating to them, that this was the principle by which we had been regulated in our selection. From these twenty-two children, Mr Gall has made up his class of ten, for this experiment, which he proposes shall continue for eight days, occupying two hours each day; and having thus chosen that class of pupils which appeared to us the most ignorant, we have, in justice to Mr Gall and this system of teaching, stated the fact, leaving the examinators to make what allowance they may on this account think proper, in determining on the failure or success of this very important and interesting experiment."

This was the state of the children's knowledge and capacity when the experiment began; and the following was found to be the state of these same children's knowledge when examined publicly in the East Church, before the Very Rev. Principal, Professors, and Clergymen of the city, and a large congregation of the citizens, eight days afterwards.

The children were first interrogated minutely on the doctrines of the gospel, which had been [Pg 189] previously arranged in a list under sixteen different heads, embodying all the leading doctrinal points in the Confession of Faith and Shorter Catechism, a copy of which was handed to the Very Rev. Principal Jack, who presided. The Report of the Experiment, prepared by their Committee, goes on to say, that "After being examined generally and satisfactorily on each of these heads, the chairman, by means of a list of the names with which he was furnished, called up some of them individually, who were carefully examined, and shewed, by their answers, that they severally understood the nature of the above doctrines, and their mutual relation to each other.

"They were then examined on the Old Testament History, from the account of the death of

Moses, downwards, to that of the revolt of the Ten Tribes in the reign of Rehoboam. Here they distinctly stated and described all the leading circumstances of the narrative comprised in the 'First Step,' whose brief but comprehensive outline they appeared, in various instances, to have filled up at home, by reading in their Bibles the corresponding chapters. They were next examined in the same way, on several sections of the New Testament," with which they had also acquired an extensive practical knowledge, besides some useful information in Civil History, Biography, and Natural Philosophy, on all which they were closely and extensively examined.

In another experiment, undertaken at the request, and under the sanction, of the Sunday School Union of London, the efficiency of this exercise, as a successful imitation of Nature in communicating knowledge, was also satisfactorily ascertained. We shall at present advert only to one feature of it, as being more immediately connected with the present branch of our subject, that of communicating knowledge to the most ignorant and depraved.

The Report of this Experiment, drawn up by the Secretaries of that Institution, records, that "it [Pg 190] had been requested, that, if possible, children should be procured, somewhat resembling the heathen, (or persons in a savage state,) whose intellectual and moral attainments were bounded only by their knowledge of natural objects, and whose feelings and obligations were of course regulated principally by coercion and fear of punishment."

Two gentlemen of the Committee, accordingly, undertook the search, and at last procured from the streets three children, a boy and two girls of the ages, so far as could be ascertained, (for they themselves could not tell,) of seven, nine, and eleven years, whom we shall designate G, H, and I. These children had no knowledge of letters; knew no more than the name of God, and that he was in the skies, but could not tell any thing about him, or what he had done. They knew not who made the sun, nor the world, nor themselves. They had no idea of a soul, or that they should live after death. One had a confused idea of the name of Jesus, as connected with prayers; which, however, she did not understand, but had never heard of Adam, Noah, or Abraham. When asked if they knew any thing of Moses, one on them (viz. I,) instantly recollected the name; but when examined, it was found that she only referred to a cant term usually bestowed upon the old-clothesmen of London. They had no idea of a Saviour; knew nothing of heaven or hell; had never heard of Christ, and knew not whether the name belonged to a man or a woman. The boy, (H,) when strictly interrogated on this point, and asked, whether he indeed knew nothing at all of Jesus Christ, thinking his veracity called in question, replied with much earnestness, and in a manner that showed the rude state of his mind, "No; upon my soul, I do not!"

This class, after eleven days' teaching, conducted in public, and in the presence of numbers of teachers, during one hour daily, were publicly examined in the Poultry Chapel, by a number of [Pg 191] clergymen, before the Committee of the Sunday School Union, and a numerous congregation. The Report goes on to say, that the children of this class "were examined, minutely and individually, on the great leading doctrines of Christianity. The enumeration and illustrations of the several doctrines were given with a simplicity, and in a language, peculiarly their own; which clearly proved the value of that part of the Lesson System which enjoins the dealing with the ideas, rather than with the words; and which shewed, that they had acquired a clear knowledge of the several truths. They were also examined on some parts of the Old Testament History," with which, during that short period, they had been made thoroughly acquainted.

These facts of themselves, and they could be enlarged to almost any extent, clearly prove the power and the value of this exercise in communicating knowledge to the young. And, as we have seen that its efficiency consists entirely in its close imitation of the process of Nature in accomplishing the same object, we are the better warranted to press upon the minds of all who are interested in education and the art of teaching, the importance of keeping strictly to Nature, so far as we can trace her operations; as it is by doing so alone that we are sure of success. It may no doubt be said, that there are other ways of communicating knowledge to the young, besides the catechetical exercise; and therefore the necessity of adopting it is neither so necessary nor so urgent. To this it may be answered, that there have been other plans adopted, in urgent cases, for the nourishment of the body, besides the common mode of eating and digesting food; but all such plans are unnatural, and are of course but momentary and inadequate;—this, therefore, would form no argument for depriving children of their food. But even this argument is not parallel; for, although it has been found that partial nourishment may [Pg 192] be conveyed to the blood otherwise than by the stomach, it has not yet been ascertained that any idea can enter the mind, except by this act of "reiteration." Unless, therefore, something definite can be brought forward, which will secure the performance of this act, different from the catechetical exercise, or the several modifications of it, that exercise ought to be considered as a necessary agent in every attempt of the teacher to communicate knowledge.

But this admission in a philosophical question is much more than is at all necessary for our present purpose. It is in every view of the case sufficient to shew, that knowledge cannot be imparted without voluntary active thought upon the ideas communicated, or what we have termed, "reiteration;"—and if this be once admitted, and if it can be shewn that the catechetical exercise produces this result *more certainly*, and *more powerfully*, than any other mode of instruction yet known, then nothing but prejudice will lead to the neglect of this, or will give the preference to another. And it is a remarkable fact, that on investigation it will be found, that almost every useful exercise introduced into schools within the last thirty years, owes its efficiency to the presence, more or less, of the principles which we have been explaining, as embodied in the catechetical exercise.[14]

**FOOTNOTES:**

[13] Note L.

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## CHAP. IV.

### *On the Means by which Nature may be imitated in Exercising the Principle of Individuation.*

While it appears to be a law of Nature, that there can be no accumulation of knowledge without the act of reiteration, yet there are other principles which she brings into operation in connection with it, by which the amount of the various branches of knowledge received is greatly increased, and the knowledge itself more easily comprehended, and more permanently retained upon the memory. [Pg 193]

The first of these principles, which we have before alluded to and described, is that of "individuation;" that principle by which an infant or child is induced to concentrate the powers of its mind upon a new object, and that to the exclusion for the time of every other, till it has become acquainted with it.

In a former chapter we found, that as long as a child remains solely under the guidance of Nature, it will not allow its attention to be distracted by different *unknown* objects at the same time; but whenever it selects one for examination, it invariably for the time abandons the consideration of every other. The consequence of this is, that infants, with all their physical and mental imbecility, acquire more real knowledge under the tuition of Nature in one year, than children who are double their age usually gain by the imperfect and unnatural exercises of unreformed schools in three or four. The cause of this is easily detected, and may be illustrated by the analogy of any one of the senses. The eye, for example, like the mind, must not only see the object, but it must look upon it—examine it—before the child can either become acquainted with it at the time, or remember it afterwards. But if unknown objects are made rapidly to flit past the eye of the child, so that this cannot be done before there is time to fix the attention upon any of them, the labour of the exhibitor is not only lost, but the sight of the child is impaired;—the eye itself is injured, and is less able, for some time afterwards, to look steadily upon any other object, even when that object is stationary. Such is the injury and the confusion created in the mind of a child when it is hurried forward from object to object, or from truth to truth, before the mind has had leisure to lay hold of them, or to concentrate its powers upon the ideas they suggest. The labour of the teacher in that case is not only lost, and the child harassed and irritated, but the powers of the mind, instead of being brightened and strengthened, are bewildered and mystified, and must therefore be weakened in a corresponding degree. [Pg 194]

The method to be adopted therefore for the imitation of Nature in the working of this principle, will consist in bringing forward, for the consideration of the child, every new letter, or word, or truth, or object, *by itself*. When presented separately and alone, there is no distraction of mind—no confusion of ideas; the child is allowed to consider it well before learning it, so that he will know something of its form or its nature, and will remember it again when it is either presented to his notice alone, or when it is grouped with others. His idea of the object or truth may be indistinct and faint at first, but it is correct so far as it goes; and the ideas which he retains concerning it, are obviously much more extensive, than if the mind at its first presentation had been disturbed or bewildered by the addition of something else.

His idea of the object or the truth, after being repeatedly considered, may still be very inadequate, but it will now be distinct; and it is the want of this precision in the pupil's mind that so frequently deceives teachers, and confuses and obstructs the future advance of the scholars. When a child hears, or reads a passage, the teacher, who understands it himself, too often takes it for granted that the child as he proceeds is reiterating the ideas as well as himself, and is of course master of the subject. But this is not always the case; and wherever the child has not succeeded in doing so, all that follows in that lesson is usually to the child the cause of confusion and difficulty. He finds himself at a stand; and however far he may in these circumstances be dragged forward, he has not advanced a step, and he must at some future period,—and the sooner the better,—return again to the same point, and proceed anew under serious disadvantages. [Pg 195]

In almost every stage of a child's education, the neglect of this principle is seriously and painfully felt. It is the cause of acute mental suffering to well affected and zealous pupils; and it is the chief origin of all the heartlessness, and idleness, and apathy, which are found to pervade and regulate the conduct of those that are less active. A careful appliance of this principle of individuation, therefore, is always of importance in education; but it ought never to be forgotten, that it is more peculiarly valuable and necessary at the commencement, than at any other period of a child's progress in learning. We shall advert to a few of the methods by which it may be

applied in ordinary school education, in contrast with some instances in which it is neglected.

In teaching the alphabet to children, the principle of individuation is indispensable; and its neglect has been productive of serious and permanent mischief. A child of good capacity, by a proper attention to this principle, will, with pleasure and ease, learn the names and forms of the letters, with the labour of only a few hours;[15] while, by neglecting the principle, the same child would, after years of irritation and weariness, be still found ignorant of its alphabet. The overlooking of the principle at this period has done an immense deal of injury to the cause of education. It has, at the very starting post in the race of improvement, quenched and destroyed all the real, as well as the imaginary delights of learning and knowledge. It has given the tyro such an erroneous but overwhelming impression of the difficulties and miseries which he must endure in his future advance, that the disgust then created has often so interwoven itself with his [Pg 196] every feeling, that education has during life appeared to him the natural and necessary enemy to every kind of enjoyment.

It used to be common, and the practice may still we believe be found lingering among some of the lovers of antiquity, to make a child commence at the letter A, and proceed along the alphabet without stopping till he arrived at Z; and this lesson not unfrequently included both the alphabets of capitals and small letters. Now the cruelty of such an exercise with a child will at once be apparent, if we shall only change its form. If a teacher were to read over to an infant twice a-day a whole page or paragraph *without stopping* of Cæsar or Cicero in Latin, and demand that on hearing it he shall learn it, we could at once judge of the difficulty, and the feelings of a volatile mind chained to the constant and daily repetition of such a task; and if this exercise were termed its "education," we can easily conceive the amount of affection that the child would learn to cherish towards it. Now this is really no exaggerated illustration of the matter in hand, for in both cases the principle of individuation, so carefully guarded and enforced by Nature, is equally outraged; and it is only where, by some means or other, a remedy for the evil accidentally occurs, that the result in the case of the alphabet, is not exactly the same as it would have been in the case of the classics above supposed. The writer once saw in a Sunday school, where the children were taught twice each Sabbath, a class in which some of the children had attended for upwards of two years, and were still in their alphabet; and if the same mode had been pursued, there is little doubt that they would have been in it yet.

The remedy for this evil is obvious. Instead of confounding the eye and the mind of the child, by rapidly parading twenty-six, or fifty-four forms, continuously and without intermission before the [Pg 197] pupil, the letters ought to be presented to the child singly, or at most by two at a time; and these two should be rendered familiar, both in name and in form, before another character is introduced. When a few of the more conspicuous letters have become familiar, another is to be brought forward, and the child may be made to amuse himself, by picking out from a page of a book, all the letters he has learned, naming them, and if necessary describing them to a companion or a sub-monitor as they occur. Or he may be set down by himself, with a waste leaf from an old book, or pamphlet, or newspaper, to prick with a pin the new letter or letters last taught him; or, as an introduction to his writing, he may be made to score them gently with ink from a fine tipped pen. In these exercises, and all others which are in their nature similar, the principle of individuation is acknowledged and acted upon; and therefore it is, that a child will, by their means, acquire an acquaintance with the letters in an exceedingly short time, and, which is of still greater importance, without irritation or trouble. These methods may sometimes be rendered yet more effective, by the teacher applying the catechetical exercise to this comparatively dry and rather forbidding part of a child's education. It proceeds upon the principle of describing each letter, and attaching its name to the description, such as "round o," "spectacle g," "top dotted i," &c. as in the "Classified Alphabet." The teacher has thus an opportunity of exercising the child's imagination, as well as its memory, and making a monotonous, and comparatively unintellectual exercise, one of considerable variety and amusement.

In teaching the alphabet to adults, whose minds are capable of appreciating and applying the principle of analysis, the "Classified Alphabet" should invariably be used. By this means their memory, in endeavouring to recall the form and name of any particular letter, instead of having [Pg 198] to search through the whole *twenty-six*, has never to think of more than the four or five which compose its class,—a circumstance which makes the alphabet much more easily acquired by the adult than by a child. But even here, the principle of individuation must not be lost sight of; each letter in the class must be separately learned, and each class must be familiar, before another is taught.

The principle of individuation continues to be equally necessary in teaching children to combine the letters in the formation of words; and when it is attended to, and when the only real use of letters, as the mere symbols of sound, is understood by the pupil, a smart child may be taught to read in a few minutes. This is not a theory, but a fact,—evidenced in the experience of many, and in the presence of thousands. Nor is it necessary that the words which are taught, should consist only of two or three letters; if the word be familiar to the child in speech, it becomes instantly known, when divided and taught in parts or syllables; and when once it is learned by the sounds of the letters, though these sounds merely approximate to the pronunciation of the word, it is sufficient to give a *hint* of what the word is, and when once it is known, it will not likely be again forgotten. By this means, the child is never puzzled except by entirely new words; and by knowing the use of the letters in their sounds, he receives a key by which at least to *guess* at them, which the sense of the subject greatly assists; so that one day, or even one hour, is sometimes, and we have no doubt will soon be generally, sufficient to overcome

the hitherto forbidding and harassing drudgery of learning to read.

In teaching children their first lessons, it is of great importance that the main design of reading should be clearly understood, and attended to. As writing, philosophically considered, is nothing more than an artificial substitute for speaking, so reading is nothing more than an artificial [Pg 199] substitute for hearing, and is subject to all the laws which regulate that act. Now one of the chief laws impressed by Nature on the act of *hearing* the speech of others, is the very remarkable one formerly alluded to, namely, the exclusive occupation of the mind with the *ideas* communicated, to the entire exclusion of the *words*, which are merely the means by which the ideas are conveyed. The words are no doubt heard, but they are never thought of;—for if they were, the mind would instantly become distracted, and the ideas would be lost. This law equally applies to the act of *reading*; and every one feels, that perfection in this art is never attained, till the mind is exclusively occupied with the ideas in the book, and never in any case with the words which convey them. But in learning to read, the difficulty of decyphering the words, tends to interfere with this law, and this must be guarded against. The remedy simply is, to allow the child time to overcome this first difficulty, by repeatedly, if necessary, reading the sentence till he can read it perfectly; and then, before leaving it, to discipline the mind to the perception of the ideas it contains, now that the child can read it well.

The catechetical exercise, as in the "First Class Book on the Lesson System," will almost always accomplish the object here pointed out; and the value of the exercise it recommends will be best understood and appreciated, by observing the evils which invariably follow its neglect. For if the child be allowed to read on and on, while the difficulty of decyphering the words in the book remains, the ideas will be left behind, the attention will be fatigued, and at last exhausted. The child will continue to read without understanding; and the habit thus acquired of reading the words, without perceiving the ideas at all, will soon be established and confirmed. Custom has robbed this relict of a former age of much of its repulsiveness; but it is not the less hurtful on that [Pg 200] account. Were we to run a parallel with it in any other matter, its true nature and deformity would at once appear. For example, were we to suppose ourselves listening to an imperative message from a superior, by a messenger with whose language we were but partially acquainted, we would not allow him to proceed with his communication from beginning to end, while the very first sentence he uttered, had not been understood, and the mind was unprepared for that which was to follow. We would stop him at the close of the very first sentence, and would master the meaning of that, before we would advance with him another step; and then we would make him proceed at such a pace as we could keep up with him. If he left us again behind, there would be but one remedy. He must return and repeat the sentence where he left us, till we had comprehended his master's meaning; and if he refused to do this, he could not conscientiously say to him on his return, that he had delivered his message. By following this plan, and adopting this branch of the natural principle of individuation in such a case, two benefits would arise. We would first become perfectly acquainted with the will and message of our superior; and next, we would, at the close of the exercise, be so much more familiar with the language in which it was delivered, as that it would require less effort on a future occasion, to comprehend the meaning of the same speaker. If this method had not been adopted, and the message had been given entire and without a pause, it might have been rehearsed in our hearing a hundred times, but the meaning would neither have been mastered, nor would our knowledge of the language have been in the least improved.

The application of this principle of individuation in the early stages of a child's learning to read, suggests the propriety also of making some preparation for his reading every new lesson in succession. We have seen that it is chiefly the new words in a lesson that create difficulty, and [Pg 201] prevent the operation of that important law in Nature which induces the mind at once to lay hold of the ideas. To obviate this distraction of mind therefore beforehand, the new words which *are to occur* in the lesson should be selected, and made familiar to the child previously, and by themselves;—he should be taught to read them easily by the combination of their letters, and clearly to understand their meaning, in precisely the same shade in which they are used in the lesson he is to read. When this is done, the lesson will be read with ease and with profit;—while, without this, the difficulty will be much greater, if not beyond his powers. In accordance with this plan, the "First Class Book," before referred to, has been constructed, and its efficiency on that account is greatly increased.

The neglect of this special application of the principle has been long and painfully felt in society, and most of all where the young have been sent earliest to school. The habit of reading the words without understanding the meaning of what they read, having once been acquired, the weak powers of children are not sufficient to overcome the difficulties with which this habit has surrounded them. They feel themselves burdened and harassed with unnatural and unmeaning exercises for years, before they can acquire the art of reading the words of the simplest school book; and, what is still worse, after they have left the school, and have entered upon the busy scenes of life, they find, that they have now to teach themselves an entirely new art,—the art of *understanding by reading*. Instead of all this waste of energy, and patience, and time, experience has fully proved, that by following the plain and easy dictates of Nature, as above explained, all the drudgery of learning to read may be got over in a week,—it has been times without number accomplished in a single day,[16]—and this without any harassing exertion, and generally with [Pg 202] delight. Of the truth of this, a few out of many instances may here be enumerated.

In the summer of 1831, the writer one morning found himself, by mere accident, and a perfect stranger, in a Sunday school in the borough of Southwark, London. He attached himself first to a class of children, some of whom he found on enquiry had been two years at the school, and were

yet only learning the alphabet. In the same school, and on the same morning, a young man who only knew his letters, but had never yet attempted to put them together, was classified with the infants, whom he had willingly joined in his anxiety to learn. He had a lesson by himself. By a rigid adherence to the above principle of individuation, this young man, to his own great astonishment, was able in a few minutes to read a verse. The lesson went on, and in somewhat less than half an hour he had mastered several verses, and now knew perfectly how to make use of the letters in decyphering the several words. By that one lesson he found himself quite able to teach himself. In proof of this, as was afterwards ascertained, he read that same day on going home, without help, nineteen verses of the same chapter; and these verses, on returning to school on the same afternoon, he read correctly and without hesitation, to his usual and astonished teacher. There can be no doubt, from this circumstance, that if it had been at all necessary, he could, without further aid, and with still greater ease, have read a second nineteen verses, and perfected himself by practice in this important, and supposed difficult art of reading, by this one lesson of less than half an hour.

In a later experiment, made in Dumfries, in the presence and under the sanction of Sir Thomas Kirkpatrick, and the clergymen and teachers of that town, the power of this principle was put to a severe trial, in a very unexpected and extraordinary manner. The week-day teachers of that town having heard of some of the above circumstances, and of the powers of the Lesson System [Pg 203] generally, in enabling children to read with but little trouble, were desirous of having its powers tested in that town, where the writer happened to be for a few days. He agreed; and Sir Thomas Kirkpatrick, the Sheriff of the county, with the clergymen and teachers, at his request, formed themselves into a committee for the purposes of the investigation. A sub-committee of the week-day teachers were appointed to procure a boy to be taught, which they did, and who, on being closely examined at a preliminary public meeting of the whole examinators, was found totally ignorant of words, and knew not one letter from another, with the exception, of "the round o."

With this boy the writer retired, having agreed to call them again together at a public meeting, as soon as he was ready. This at the time he did not doubt would have been on the very next day; —but he was disappointed. He had not been five minutes with his pupil, till he found, to his great mortification, that he had little or no intellect to work upon. The boy was twelve years of age, and yet he was perfectly ignorant of all the days of the week, except one, the market day, on which he was in the practice of making a few pence by holding the farmers' horses. He could in no case tell what day of the week went before or followed another. He could count numbers forward mechanically till among the teens; but by no effort of mind could he tell what number came before nine, till he had again counted forward from one. The most obvious deduction from the simplest idea appeared to be quite beyond the grasp of his mind. For example, though repeatedly told that John was Zebedee's son, yet, after frequent trials, he could never make out, nor comprehend who was John's father. Yet this boy,—one certainly among the lowest in the grade of intellect of our species,—by a rigid application of the principle of individuation, was enabled to [Pg 204] overcome a great part of the drudgery of learning to read, by exactly eight hours' teaching. This boy, who at the preliminary meeting on Wednesday, knew only "the round o," read correctly in the Court-House on the following Monday, a section of the New Testament, to the Rev. Dr Duncan, minister of Ruthwell, before the Sheriff, clergymen, teachers, and a large assembly of the inhabitants of Dumfries. To ascertain that he had in that time really *learned to read*, and that he did not repeat the words of the section by rote, he was made to read before the audience, in a chapter of the Old Testament, and then from a newspaper, the same words that he had read in his lesson. This he did readily, and without a mistake.

**FOOTNOTES:**

[14] For some practical information and directions connected with the subjects in this chapter, see Note M.

[15] Note N.

[16] Note H.

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## CHAP. V.

### *On the Means by which Nature may be imitated in Applying the Principle of Grouping, or Association.*

The principle of Grouping, or Association, as employed by Nature in her educational process, is obviously intended to enable the pupil easily to receive knowledge, and to assist the memory in retaining and keeping it ever after at the command of the will. It is employed to unite many objects or truths into one aggregate mass, which is received as one,—having the component parts

so linked, or associated together, that when any one part is afterwards brought before the mind, it has the power of immediately conjuring up, and holding in review, all the others. For example, when a child enters a room in which its parents and relations are severally employed, the whole scene is at a single glance comprehended and understood, and will afterwards be distinctly remembered in all its parts. The elements of the scene are no doubt all familiar, but the particular grouping of these elements are *entirely new*, and form an addition to his knowledge, as [Pg 205] we formerly explained, as substantial, and as distinct, as the grouping of any other kind of objects or circumstances could possibly do. Here then is a certain amount of knowledge acquired by the child, which could be recorded in writing, or which might be communicated by words; but which, by the operation of this principle of grouping, has been acquired with greater ease, and in much less time, than he could either have read it, or described it. It has been done in this instance by Nature bringing the *ideas* suggested by the group directly before the mind of the child, without even the intervention of words; and we see by this example, how much more laborious it would have been to communicate the very same amount of knowledge to the pupil, by making him *read* the description of it, and how utterly preposterous and unnatural it would be to compel him, for the same purpose, to commit the words of that description to memory. The words are merely an artificial contrivance for the conveying of ideas;—and the more they can be kept out of view, it will be better for the teacher, and more natural and easy for the child.

In communicating knowledge, therefore, to the young, the more directly and simply the ideas to be communicated are presented to the mind the better. They must usually be communicated by words; but these, as the mere instruments of conveyance, should be kept as much as possible out of view. To bring them at all under the notice of the child is a defect; but to make them the chief object of learning, or to make the pupil commit them to memory, is not only laborious and unnecessary, but is unnatural and hurtful.

In all this we ought simply to take our lessons from Nature, if we wish to succeed in conveying knowledge by the combination of simple objects. In the above example, we have seen that a single glance was sufficient to give the infant a distinct idea of the whole scene; and the reason [Pg 206] is, that the principle of individuation had previously done its work. Each of the elements of which the scene was composed, had undergone an individual and separate examination, and therefore each was familiar. This is Nature's method of communicating knowledge to the young; and it is obvious, that a different arrangement of the objects or actions would have made no difference in the effects produced by the operation of the principle. Whatever the circumstances might have been, the new scene, with all its variety of incidents, persons, and things, which it would take ten-fold more time to enumerate than to learn, would at once be impressed on the mind, and delivered over to the keeping of the memory, without labour, or any perceptible effort. The whole grouping forms a chain of circumstances, any one link in which, when afterwards laid hold of by the mind, brings up all the others in connection with it. The memory by this means is relieved from the burden of remembering all the individualities, and the innumerable details of the scene, by maintaining a comprehensive hold of the whole united group, as one undivided object for remembrance.

From this it appears evident, that this principle is intended to succeed that of individuation, and never to precede it. Objects and truths which form the elements of knowledge must be individually familiar, before they can be successfully grouped, or associated together in masses, in the way in which the several parts of the knowledge of the young are usually presented; but after these objects or truths have once become known, they may be permanently associated together in any variety of form without fatigue, and be retained on the memory for use without confusion or distraction of any kind.

In our investigations into the nature and working of this principle, as detailed in a former chapter, we found several causes which gave rise to certain uniform effects, which, for the [Pg 207] purpose of imitation or avoidance, may be classed under the following heads:—We found,

1. That wherever the principle of grouping acted with effect, it had always been preceded by the principle of individuation.

2. That wherever the principle of individuation was made to interfere, the effect intended by the principle of association was in the same degree obstructed or destroyed.

3. That whenever ideas or objects, whether known or unknown, were presented to a child in greater number than the mind could receive or reiterate them, it silently dropped the surplus;—but if these were *forced* upon the mind, all the mischiefs arising from the interference of the two hostile principles immediately took place.

4. That children, in grouping under the tuition of Nature, received and retained the impressions of objects presented to their notice, in a natural and regular order;—forming in their minds a continuous moving scene, where motion formed a part of it; and that this movement of the objects, actually was a portion of the grouping.

These being the facts connected with this portion of Nature's educational process, the object of the teacher should be to endeavour to imitate her in all these circumstances; carefully avoiding what she has shewn to be inoperative and hurtful, and copying as closely as possible all those that tend to forward the objects of instruction.

The first thing then to be attended to by the teacher, is, that in every attempt to communicate knowledge to a child by the grouping of objects, he takes care that the principle of individuation has preceded it;—that is, that the various ideas or objects to be grouped, be individually familiar to the pupil. In communicating a story, therefore, or an anecdote, or in teaching a child to read, [Pg 208]

care must be taken that the objects or individual truths, the words, or the letters, be previously taught by themselves, before he be called upon to group them in masses, whether greater or smaller. If this be neglected, an important law of Nature is violated, and the lesson to this extent will be ineffective, or worse. But if, on the contrary, this rule be attended to, the pupil, when he comes to these objects in the act of grouping, is prepared for the process; he meets with nothing that he is not familiar with; he has nothing to learn, and has only to allow the objects to take their proper places, as when he looked into the room, and grouped its contents as before supposed. All this being perfectly natural, is accomplished without effort, and with ease and pleasure.—This precaution on the part of the teacher, will at once remove many of the difficulties and embarrassments which have hitherto pressed so heavily upon the pupil in almost every stage of his advance, but more especially in the early stages of his learning to read.[17]

As an illustration of our meaning, we may notice here, that a child who knows what is meant by "sheep," and "the keeping of sheep," of "tilling the ground," and "making an offering to God," &c. is prepared to hear or to read an abridgement of the story of Cain and Abel. We say *an abridgement* or *first step*, for reasons which shall afterwards be explained. Without a previous knowledge of these several elements of which this story is compounded, he could neither have listened to it with pleasure, nor read it with any degree of profit; but as soon as these are individually familiar, the grouping,—the knowledge of the whole story,—is a matter of ease, and generally of delight. As the story advances, it causes a constant and regular series of groupings [Pg 209] on the mind by the imagination, which are at once exquisitely pleasing and permanent. The child, as in a living and moving picture, imagines a man laboriously digging the ground, and another man in a distant field placidly engaged in attending to the wants and the safety of a flock of sheep. He imagines the former heaping an altar with fruits and without fire; and the latter killing a lamb, laying its parts on an altar, while a stream of fire descends from the skies and consumes it. His imagination goes on with increasing interest to picture the quarrel-scene in the field; and he in effect sees the blow given by the club of Cain, that destroyed the life of his brother. All this living and moving scene will be remembered in groups; and these groups will be more or less closely linked together, and will be imagined more or less distinctly as a whole, in proportion to the mental advancement of the particular child.

The next thing to be attended to in communicating knowledge to a child by grouping, is, that no strange for unknown object or idea be introduced among those which he is called upon to group; because in that case, the operation will be materially interfered with, and either marred or destroyed. The completeness of this operation in the hands of Nature, depends in a great measure, as we have seen, upon the perfect composure and self-possession of the mind during the process. If there be no interruption,—no element of distraction introduced into the exercise,—all the circumstances, as they arise in the gradual developement of the story, are comprehended and grouped. The living and moving picture is permanently fixed upon the memory, so that it may be recalled and reviewed at any future time. But if, on the contrary, the placidity of the mind be interrupted,—if some strange and unknown object be introduced, whose agency is really necessary for connecting the several parts of the story,—the very attempt of the child to become [Pg 210] individually acquainted with it, throws the whole process into confusion; and he has either to drop the contemplation of this necessary part of the machinery, or to lose the benefit of all that is detailed during the time he is engaged with it. In either case the end is not gained; and the great design aimed at by the teacher,—the communication of the knowledge connected with the narrative,—is more or less frustrated. Like the landscape pictured on the placid bosom of the lake, the formation and contemplation of his own undisturbed imaginings are delightful to the child; but the introduction of an unknown object, like the dropping of a stone in the former case, produces confusion and distortion, which are always unpleasant and painful.

One general reason why the introduction of unknown objects into these groupings of the child is so pernicious, may also be here adverted to. It arises from the circumstance, that no person, whether young or old, can form, even in his imagination, the idea of an entirely new thing. This is commonly illustrated by the well known fact, that it is impossible to conceive of a new sense;—but it is equally applicable to the conception of a new object. Adults can no doubt conceive and picture on their imaginations, objects and scenes which they never saw;—but this mental act is not the imagining of an entirely new thing. All such scenes or things are compounded of objects, or parts of objects, which they have seen, and with which they are familiar. They can readily picture to themselves a centaur or a cerberus, a mermaid or a dragon,—creatures which have no existence, and which never did exist; but a little reflection will shew, that nothing which the mind conceives of these supposed animals is really new, but is merely a new combination of elements, or parts of other animals, already familiar. Children accordingly can easily conceive the idea of a giant or a dwarf, a woman without a head, or a man with two, because the elements of which [Pg 211] these anomalies are compounded are individually familiar to them;—but were they told of a person sitting in a howdah, or being conveyed in a palanquin, without having these objects previously explained or described to them, the mind would either be drawn from the story to find out what these meant, and thus they would lose it; or they would, on the spur of the moment, substitute in their minds something else which perhaps had no likeness to them, and which would lead them into serious error. For example, they might suppose that the one was a house, and the other a ship;—a supposition which would distort the whole narrative, and would render many of its parts inconsistent and incomprehensible.

As adults then, in every similar case, are under the necessity of drawing materials from their general knowledge, for the purpose of compounding all such unknown objects, it must be much more difficult for a child to do this, not only because of his want of ability, but his want of materials. The remedy therefore in this case is, to explain and describe the objects that are to be

grouped, before the pupil be called upon to do so. And when the object has not been seen by the child, and cannot be exhibited by a picture, or otherwise, the teacher must exert his ingenuity in enabling him to form an idea of the thing that is unknown, by a combination of parts of objects which are. Thus a tiger may be described as resembling a large cat; a wolf, a fox, or even a lion, as resembling certain kinds of dogs; a howdah as a smaller sofa, and a palanquin, as a light crib. In all these cases, it is worthy of notice, that a mere difference of size never creates confusion;—simply because, by a natural law in optics, such differences are of constant occurrence in the experience both of children and adults. A water neut will convey a sufficiently correct idea of a crocodile; and the picture of an elephant, only one inch square, will create no difficulty, if the [Pg 212] correct height be given. When these rules have been attended to, it will be found, that this principle in Nature has been successfully imitated; and the pupil, by the previous process of individuation, will be perfectly prepared for the delightful task of grouping the objects which he now knows. When he comes to these objects in the narrative, he conceives the idea of them accurately, and he groups them without effort. There is no hesitation, and no confusion in his ideas. The painting formed upon the mind is correct; the whole picture is united into one connected scene, and is permanently imprinted on the memory for future use.

Another circumstance connected with this principle of grouping in children, we found to be, that when, at any time a greater number of objects were presented to the mind than it was able to reiterate and group, it silently dropt the surplus, and grouped those only which came within the reach of its powers; but if in any instance an attempt was made to *force* the child to receive and reiterate the ideas of objects beyond a certain point, the mind got confused, and its powers weakened.—The imitation of Nature in this point is also of great importance in education, particularly in teaching and exercising children in reading. To perceive this more clearly, it will be necessary to make a few remarks on the nature of the art of reading.

Reading is nothing more than a mechanical invention, imitative of the act of hearing; as writing is a mechanical mode of indicating sounds, and thus becomes a substitute for the art of speaking, and conveying ideas. But there is this material difference between reading and hearing, that in hearing the person giving attention is in a great measure passive, and may, or may not attend as he pleases. He may receive part of what is said, and, as prompted by Nature, he may silently drop all that he cannot easily reiterate. But in the act of reading, the person has both the active and [Pg 213] the passive operations to perform. His mind, while he reads, must be actively engaged in decyphering the words of his book, and the ideas are, or should be, by this act, forced upon the observation of the mind at the same time. As long, therefore, as the child is required to read nothing except that which he understands, and to read no more, and no faster, than his mind can without distraction receive and reiterate the ideas which he reads, the act of grouping will be performed with ease, and with evident delight, and the powers of the mind will be healthfully and extensively exercised and strengthened:—But if this simple principle of Nature be violated, the exercise becomes irritating to the child, and most pernicious in its consequences. The neglect of this application of the principle is so common in education, that it usually escapes observation; but on this very account it demands from us here a more thorough investigation.

We say then, that this principle is violated when a child is required to read that which it does not, and perhaps cannot understand; and also when he is required to read more, or to read faster, than he is able to reiterate the ideas in his own mind. On each of these cases we shall say a few words, for the purpose of warning and directing the teacher in applying this important principle in education.

Let us then suppose a child set to read a section which he does not, and which there is every probability he cannot understand, and then let us carefully mark the consequences. The child in such a case reads the words in his book, which ought to convey to his mind the ideas which the words contain. This is the sole purpose of either hearing or reading. But this is not accomplished. The words are read, and the ideas are not perceived; but the child is required to read on. He does so; and of course when the first part of the subject or sentence has been beyond his reach, the second, which most probably hangs upon it, must be much more so. In this therefore he also fails; [Pg 214] but he is still required to read on. Here is a practice begun, which at once defeats the very intention of reading, and allows the child's mind to roam upon any thing or every thing, while the eye is mechanically engaged with his book. The habit is soon formed. The child reads; but his attention is gone. He does not, and at length he cannot, understand by reading. This habit, as we formerly explained, when it is once formed, it requires great efforts on the part of the child to overcome. Most people when they are actively engaged in life, do at last overcome it; while thousands, who have nominally been taught to read, never can surmount the difficulties it involves. Many on this account, and for want of practising an art which they cannot profitably use, lose the art altogether.

But again, let us suppose a child set to read that which he may understand, but which he is required to read more rapidly than allows him to perceive and to reiterate the ideas while reading, and let us mark what are the necessary consequences in such a case. The child is called on to read a sentence, and he does so. He understands it too. But the art of reading is not yet familiar, and he has to bend part of his attention to the decyphering of the words, as well as to the perception and reiteration of the ideas. This requires more time in a child to whom reading is not yet familiar, than to a child more advanced. But give him a little time, and the matter is accomplished the ideas have been received, and they will be reiterated, grouped, and committed to the keeping of the memory,—and then they will form part of his knowledge. But if this time be not given,—if the child, while engaged in collecting the ideas from the words of one sentence, be urged forward to the reading of another, the mental confusion formerly described instantly takes

[Pg 215]

place. More ideas are forced upon the mind than it can reiterate; no group can be formed, because the elements of which it ought to be composed, have not yet been perceived; the imagination gets bewildered;—the mind is unnaturally burdened;—its faculties are overstretched;—the child is discouraged and irritated; the powers of his mind fatigued and weakened; and the whole object of the teacher is at once defeated, and rendered worse than useless.—In every case, therefore, when the child is called on to read, sufficient time should be given;—the teacher taking care that the main design of reading, that of collecting and grouping ideas, be always accomplished; and that the pupil reads no more at one time than he can thoroughly understand and retain.

There is yet another circumstance connected with this process of grouping, which ought not to be overlooked. It refers to the order in which the objects to be grouped by the child are presented to his notice. A child under the guidance of Nature, receives and retains its impressions of objects in a natural and simple order. When it witnesses a scene, the group of objects, or actions formed and pictured on the mind by the imagination, is exactly as they were seen, the one circumstance following the other in natural and regular order. In telling a story therefore to a child, and more especially in composing lessons for them to read, this part of Nature's plan should be carefully studied and acted upon. The elements of which the several groupings are composed, or the circumstances in the narrative to be related, should be presented in the order in which the eye would catch them in Nature, or the order in which they occurred, that there may be no unnecessary retrogression of the mind, no confounding of ideas, no fear of losing the links that connect and bind together the minor groupings of the story. In the history of Cain and Abel, for example, the child is not to be required to paint upon his imagination, a deadly struggle between two persons of whom as yet he knows nothing; and then, retiring backwards in [Pg 216] the story, be made acquainted with the circumstances connected with their several offerings to God; and last of all, their parentage, their occupations, and their characters. The minds of the young and inexperienced would be perplexed and bewildered by such a plan of proceeding; and the irregularity would most probably be the cause of their losing the whole story. The opposite of this plan is no doubt frequently adopted in works of fiction prepared for adults, and for the sake of effect; but every one must see that it is unnecessary in simple history, and is not at all adapted for the instruction of the young. When Nature's method is adopted, the child collects and groups the incidents as he proceeds, and paints, without effort, the whole living and moving scene on his imagination, as if he himself had stood by, and been an eye-witness of the original events.

The ascertained benefits of these modes of imitating Nature, are literally innumerable; and it is happily within the power of every parent or teacher, in a single hour, to test them for himself. We shall merely advert to one or two instances which occurred in the recorded experiments, where their effects, in combination with the other principles, were conspicuous.

In the experiment upon the prisoners in the County Jail of Edinburgh, the acquisition of their knowledge of Old Testament History, instead of being a burden, was to them a source of unmingled gratification. There were painted upon their minds the leading incidents in the history of the patriarchs, not only in groups, but their judgments being ripened, they were able to perceive them in regular connection. These pictures, then so pleasantly impressed on their imaginations, are likely to remain with them through the whole of their lives. The Report says, that "they were examined on their knowledge of the Book of Genesis," and "gave a distinct account of its prominent facts from Adam down to the settlement in Goshen, and shewed by their [Pg 217] answers that these circumstances were understood by them in their proper nature and bearings."

By the same means, but in less time, and to a greater extent, the same object was attained with the children in Aberdeen, who, though chosen from the schools specially on account of their want of knowledge, were, by only a few hours teaching, enabled, besides many other subjects of knowledge, to receive and retain on their minds the great leading circumstances that occurred from "the death of Moses downwards, to that of the revolt of the ten tribes in the reign of Rehoboam."

In the experiment in London also, a large portion of Old Testament history, with much other knowledge, was acquired in a few hours by a boy of about nine years of age, who, previously to the commencement of the experiment, knew no more of God than the name;—who had no idea of a soul, or that he should live after death;—who "had never heard of Adam, Noah, or Abraham;"—"had no idea of a Saviour; knew nothing of heaven or hell; had never heard of Christ, and knew not whether the name belonged to a man or a woman." Yet this boy, in an exceedingly short time, could give an account of many groupings in the Old Testament history.

We shall only remark, in conclusion, that if, by the proper application of this principle, so much knowledge may be acquired by rude and ignorant children, not only without effort, but in the enjoyment of great satisfaction; what may not be expected in ordinary circumstances, when the pupils are regularly trained and prepared for the purpose, and when all the principles employed by Nature in this great work, are made to unite their aids, and to work in harmony together for producing an enlightened and virtuous population? This may most assuredly be gained in an exceedingly short period of time, by a close and persevering imitation of Nature in these [Pg 218] educational processes.

**FOOTNOTES:**

[17] Note O.

## CHAP. VI.

### *On the Methods by which Nature may be imitated in Communicating Knowledge by Classification, or Analysis.*

In a former chapter we had occasion to notice a fourth principle brought into operation by Nature in the acquisition of knowledge, which is the principle of Classification, or Analysis; and we shall now enquire how this principle may be successfully imitated by the teacher for the furtherance of his art.

There are two forms, which in a former chapter we endeavoured to trace out and explain, in which this principle of Analysis appears in the educational process of Nature. We shall here again very shortly advert to them, beginning with that which in education is perhaps the most important, but which hitherto has certainly been least attended to,—that of teaching connected truths by progressive steps.

When we read a connected section of history for the first time, and then examine the state of our knowledge respecting it, we find that we have retained some of the ideas or truths which we read, but that we have lost more. When that portion which we have retained is carefully examined, we find that it consists chiefly of the more prominent features of the narrative, with perhaps here and there occasional groupings of isolated circumstances. We have, in fact, retained upon the memory, little more than the general outline,—the great frame-work of the history. There will be the beginning, the middle, and the end, containing perhaps few of the minor details, but what is retained is all in regular order, bound together as a continuous [Pg 219] narrative, and, however meagre, the whole forms in the imagination of the reader, a distinct and connected whole. There is perhaps no more of the intended fabric of the history erected in the mind than the mere skeleton of the building; but this frame-work, however defective in the details, is complete both as to shape and size, and is a correct model of the finished building from top to bottom. This is the state of every advanced pupil's mind, after he has for the first time closed the reading of any portion of history or biography. If the narrative itself has been correct, this general outline,—this great frame-work of the history,—remains on his mind through life, without any material alteration. Additional information afterwards will assist in filling up the empty spaces left between the more massive materials, but it will neither shake, nor shift them; and even the most minute details of individual or family incidents, connected with the general narrative, while they add additional interest, and fill up or ornament different and separate parts, will never alter the general form of the fabric, nor displace any of the main pillars upon which it is supported.

This is one way of illustrating this analytical process of Nature; but for the purposes of imitating it in education it is not perhaps the best. The idea of a regular analytical table of the history, formed of successive branches, by successive readings, is by far the most natural and applicable. By a first reading of a portion of history, there are certain great leading points established in the mind of the reader, which form the first branches of a regular analysis, and to some one or other of which parts or divisions every circumstance of a more minute kind connected with the history, will be found to be related. This first great division of the history attained by the first reading, if correct, will, and must, remain the same, whatever addition may afterwards be made to it. By a second reading, our knowledge of the leading points will greatly [Pg 220] assist us in collecting and remembering many of the more minute circumstances embodied in them, or intimately connected with them; but even then, an ordinary mind, and more especially a young person, will not have made himself master of all the details. A third, and perhaps a fourth reading, will be found necessary to give him a full command of all the minuter circumstances recorded.[18]

In endeavouring to take advantage of this principle, so extensively employed by Nature, it is of great importance to observe, that a certain definite effect is produced by each successive reading. A first reading establishes in the mind of the pupil a regular frame-work of the whole history, which it is the business of every successive reading to fill up and complete. There is by the first course, a separation of the whole subject into heads, forming the regular divisions of a first branch of the analysis;—the second course tends to subdivide these again into their several parts; and to form a second branch in this analytical table;—and a third course, would enable the pupil to perceive and to separate the parts of the narrative included in these several divisions, by which there would arise a third branch, all included in the second, and even in the first.

We have here supposed, that the pupil has been engaged with the very same chapters in each of these several courses;—and that he read the same words in the first course that he read in those which followed. He had to read the whole, although he could retain but little. He had to labour the whole field for the sake of procuring plants, which could have been more certainly and more healthfully raised upon a square yard. His reading for hours has produced no more

knowledge than is expressed by the first branch of the supposed analysis; and therefore, if the [Pg 221]
teacher would but analyse the subject for the child, whether it be a science or a history,—suppose for example, the History of Joseph,—and give his younger pupils no more at first than the simple *outline* of the story, some very important advantages would be the result. In the first place, the very difficult task of keeping the volatile mind of a child continuously fixed to the subject during the lengthened reading of the whole narrative will be unnecessary;—the irritation and uneasiness which such a lengthened exercise must produce in a child will be avoided;—time will be economised, the labour of the teacher will be spared, and the mind of the child at the close of the exercise, instead of being fagged and prostrated, will be found vigorous and lively. And yet, with all this, the positive result will be the same. The child's knowledge of the subject in this latter case, will in reality be as extensive, and much more distinct and permanent, than in the former.

Here is the first step gained; and to attain the second, a similar course must be pursued. Nature, who formed this first branch of the analytical table on the minds of the first class of the children, formed another and more extended branch in the minds of the second class. The teacher therefore has only to take each of the branches which form the first step, and sub-divide them into their natural heads, so as to form a second,—and to teach this to his children in the same manner that he taught them the former. By this means, the first class will now possess an equal degree of knowledge with those who occupied the second;—and by a similar process, the others would advance to the third and the fourth classes according to circumstances.

The plan here proposed for imitating Nature by progressive steps, has been tried with undeviating success for many years. Its efficiency, as embracing the principle employed by Nature for the communication of knowledge, has been repeatedly subjected to the most delicate [Pg 222]
and at the same time the most searching experiments. By its means, in connection of course with the catechetical exercise by which it is wrought, very extraordinary effects have been produced even upon individuals whose minds and circumstances were greatly below the average of common children.

In the experiment made upon the adult criminals in the County Jail of Edinburgh, the pupils acquired easily and permanently a thorough knowledge of the history contained in the Book of Genesis. "They gave a distinct account of its prominent facts, from Adam, down to the settlement in Goshen, and shewed by their answers, that these circumstances were understood by them, in their proper nature and bearings. They gave, in the next place, a connected view of the leading doctrines of revelation; when their answers evinced, most satisfactorily, that they apprehended, not merely each separate truth, but that they perceived its relation to others, and possessed a considerable knowledge of the divine system as a whole. They were also examined upon several sections of the New Testament; where their answers displayed an equally clear and accurate knowledge of the subject." These persons, be it observed, belonged to a class of individuals, who are generally considered to be peculiarly hostile to the reception of information of this kind, and certainly who are least able to comprehend and retain it; and all this, besides other portions of knowledge, on which they were examined during the experiment, was communicated with ease by about twenty hours teaching.

By the experiment made at Aberdeen, upon children the most ignorant that the Committee of Clergymen could find among the several schools in the city, it was ascertained, that after only nine or ten hours teaching, they had not only received a thorough knowledge of "several sections of New Testament History," but that they had acquired a knowledge of all the leading events [Pg 223]
included in the Old Testament History, from "the death of Moses, downwards to that of the revolt of the Ten Tribes in the reign of Rehoboam. Here they distinctly stated and described all the leading circumstances of the narrative comprised in the 'First Step,' whose brief but comprehensive outline they appeared, in various instances, to have filled up at home, by reading in their Bibles the corresponding chapters."

The efficiency of this form of analytical teaching, as exhibited in successive steps, when employed for the purpose of teaching a knowledge of civil history and biography, was also proved with equal certainty;—for these same children showed a thorough knowledge of that portion of the History of England embraced by the reign of Charles I. and the Commonwealth; and in biography, the life of the late John Newton having been employed for the purpose, they shewed such an acquaintance with the leading facts, and the uses to be made of them, that the reverend gentlemen in this report of the experiment say, that the children had "to be restrained, as the time would not permit."

In teaching the sciences, particularly the science of natural philosophy, this method of employing the principle of analysis has been found equally successful. Nature indeed, by the regular division of her several works, has obviously pointed this out as the proper method of proceeding, especially with the young; and the success that has invariably accompanied the attempt, shews that the opinion is well founded.

In the experiment at Aberdeen, the class of children, who were specially selected from their companions on account of their ignorance only a few days before, were "interrogated, scientifically, as to the production, the nature, and the properties of several familiar objects, with the view of shewing how admirably calculated the Lesson System is, for furnishing the young [Pg 224]
with a knowledge of natural science and of the arts. One of their little companions being raised before them on a bench, they described every part of his dress, from the bonnet downwards, detailing every process and stage of the manufacture. The bonnet, which was put on his head for this purpose, the coat, the silk-handkerchief, the cotton vest, were all traced respectively from the sheep, the egg of the silk-worm, and the cotton-pod. The buttons, which were of brass, were

stated to be a composition of copper and zinc, which were separately and scientifically described, with the reasons assigned, (as good as could be given,) for their admixture, in the composition of brass." "A lady's parasol, and a gentleman's watch were described in the same manner. The ivory knob, the brass crampet, the bamboo, the whalebone, the silk, were no sooner adverted to, than they were scientifically described. When their attention was called to the seals of the gentleman's watch, they immediately said, 'These are of pure, and those of jeweller's gold,' and described the difference. The steel ring was traced to the iron-stone in the mine, with a description of the mode of separating the metal from its combinations. The processes requisite for the preparation of wrought-iron from the cast-iron, and of steel from the wrought-iron, with the distinguishing properties of each of these metals, were accurately described, and some practical lessons drawn from these properties; such as, that a knife ought never to be put into the fire, and that a razor should be dipped in warm water previous to its being used. Various articles were collected from individuals in the meeting, and successively presented to them, all of which they described. India-rubber, cork, sponge, pocket combs, &c. A small pocket thermometer, with its tube and its mercury, its principles and use, and even the Turkey-leather on the cover, were all fully described. After explaining the nature and properties of coal-gas, one of the boys stated to the [Pg 225] meeting, that since the commencement of this experiment, he had himself attempted, and succeeded in making gas-light by means of a tobacco-pipe;—his method of doing which he also described."

The other form in which the principle of Analysis may, in imitation of Nature, be successfully employed in communicating knowledge to the young, is not to be considered as new, although the working of the principle may not have been very clearly perceived, or systematically regulated. It is seen most simply perhaps in the division of any subject,—a sermon for example—into its great general heads; and then endeavouring to illustrate these, by sub-dividing each into its several particulars. By this means the whole subject is bound together, the judgment is healthfully exercised, and the memory is greatly assisted in making use of the information communicated.

It is upon this plan that the several discourses and speeches in the Acts of the Apostles have been analysed, as an introduction to the teaching of the epistles to the young.[19] Upon the same principle depends the success of the "Analysis of Prayer," of which we shall afterwards have to speak; and it is by means of this principle, in connection with the successive steps, that the several departments of natural philosophy are proposed to be taught.

The efficiency of the principle in this form, as applied to the teaching of natural philosophy to mere school boys, has been ascertained by numerous experiments, of which the one in Aberdeen, already alluded to, has afforded good evidence. But the experiment conducted in Newry, on account of several concurrent circumstances, is still more remarkable and appropriate, and to it therefore we propose briefly to refer.

"In the year 1830, the writer, in passing through the town of Newry on his way to Dublin, was [Pg 226] waited upon by several Sunday school teachers, and was requested to afford them some information as to teaching their schools, and for that purpose to hold a meeting with them and their fellow teachers, before leaving the place. To this he readily agreed; but as he intended to go to Dublin by the coach, which passed through Newry in the afternoon, the meeting had to take place that same day at two o'clock. At that meeting, the Earl of Kilmorey and a party of his friends were very unexpectedly present; and they, after the business of the meeting was over, joined with the others in requesting him to postpone his departure, and to hold a public meeting on the following Tuesday, of which due intimation would be given, and many teachers in the neighbourhood, who must otherwise be greatly disappointed, would be able to attend." To this request, accordingly, he at once acceded.

"In visiting the schools next day, the propriety of preparing a class or two of children for the public meeting was suggested and approved of; and the day-teacher being applied to, gave Mr Gall a list of six of his boys for the purpose. With these children he met on Monday; and after instructing them in the doctrines of the Gospel, and teaching them how to draw lessons from Scripture, he began to teach them some parts of natural philosophy, and to draw lessons also from these. Their aptness, and eagerness to learn, suggested the idea of selecting one of the sciences, and confining their attention principally to it, for the purpose of ascertaining how much of the really useful parts of it they could acquire and learn to use, in the short space of time which must intervene between that period and the hour of meeting. Considering what would be most useful and interesting, rather than what would be most easy, he hastily fixed on the science of anatomy and physiology, and resolved to mark the time during which they were engaged with [Pg 227] him in learning it. These lessons were altogether oral and catechetical,—as neither he nor the children at that time had any books to assist them in their labours.

"The method adopted by Mr Gall in communicating a knowledge of this important and difficult science to these school-boys, was strictly analytical;—classifying and connecting every part of his subject, and bringing out the several branches of the analysis in natural order, so that the connection of all the parts was easily seen, and of course well remembered. An illustration of his method may induce some parents to try it themselves.

"He first directed their attention to the bones, and taught them in a few words their nature and uses, as the pillars and safeguards of the body;—the shank, the joint, and the ligaments, forming the branches of this part of the analysis. He then led them to imagine these bones clothed with the fleshy parts, or muscles, of which the mass, the ligaments, and the sinews, formed the branches. He explained the nature of their contraction; and shewed them, that the muscles being fastened at one end by the ligament to a bone, its contraction pulled the sinew at the other, and

thus bent the joint which lay between them.—He then taught them the nature and uses of the several viscera, which occupy the chest and belly, and their connection with each other. This prepared the way for considering the nature of the fluids of the body, particularly the blood, and its circulation from the heart and lungs by the arteries, and to them again by the veins, with the pulsation of the one, and the valves of the other. The passage of the blood through the lungs, and the uses of the air-cells and blood-vessels in that organ were described; when the boys, (having previously had a lesson on the nature of water, atmospheric air, and the gases,) readily understood the importance of bringing the oxygen into contact with the blood, for its renovation [Pg 228] from the venous to the arterial state. The nature of the stomach and of digestion, of the intestines, lacteals, and absorbents, was next explained, more in regard to their nature than their names,—which last were most difficult to remember;—but the knowledge of the function, invariably assisted the memory in recalling the name of the organ. They were next made acquainted with the brain, the spinal cord, and the nervous system generally, as the source of motion in the muscles, and the medium of sensation in conveying intelligence from the several organs of sense to the brain, by which alone the soul, in some way unknown, receives intelligence of outward objects. This prepared the way for an account of the organs of sense, and the mechanism of their parts; and lastly, they were made acquainted with the integuments, skin, hair, and nails, with the most obvious of their peculiarities.—On all these they were assiduously and repeatedly catechised, till the truths were not only understood, but were in some degree familiar to them. In this they were greatly assisted by a consideration of their own bodies; which Mr Gall took care to make a kind of text-book, not only for making him better understood, but for enabling them more easily and permanently to remember what he told them. When he shewed them, by their hands, feet, and face, the ramifications of the blood-vessels and nerves,—the mechanism of the joints,—the contraction of the various muscles,—the situation and particular uses of which he himself did not even know, but which were nevertheless moved at their own will, and whenever they pleased,—the young anatomists were greatly pleased and astonished; and this added to their eagerness for farther information, and to their zeal in shewing that they understood, and were able again to communicate it.

"These preparatory meetings were never protracted to any great extent, as the whole time was divided into three or four portions,—the boys being dismissed to think over the subject, (for they [Pg 229] had nothing to read,) and to meet again at a certain hour. The watch was again produced, and the time marked; and when the whole period occupied by this science and its connections was added together, it amounted to two hours and a half exactly. One of these lessons, and the longest, was given during a stroll in the fields.

"The public meeting of parents and teachers was held at Newry on the 5th of October 1830, when the above class, with others, were examined on the religious knowledge which had been communicated to them on the previous days, with its lessons and uses; after which the six boys were taken by themselves, and thoroughly and searchingly catechised on their knowledge of the anatomy and physiology of the human body. They were examined first on the nature and uses of the bones, their shapes, substance, joints, and ligaments. Then on the nature and offices of the muscles, with their blood-vessels, nerves, ligaments, sinews, and motions;—the uses of the several viscera;—the heart with its pulsations, its power, its ventricles and auricles, and their several uses;—the lungs, with their air-cells, blood-vessels, and their use in arterializing the blood;—the stomach, intestines, &c. with their peristaltic motions, lacteals, &c.;—the brain, spinal cord, and nerves, with their connections, ramifications, and uses;—the senses, with their several organs, their mechanism, and their manner of acting. On all these they were questioned, and cross-questioned, in every variety of form: And that the audience might be satisfied that this was not a mere catalogue of names, but that in fact the physiology of the several parts was really known, and would be remembered, even if the names of the organs should be forgotten, they were made repeatedly to traverse the connecting links of the analysis forward from the root, through its several branches, to the extreme limit in the ultimate effect; and, at other times [Pg 230] backward, from the ultimate effect to the primitive organ, or part of the body from which it took its origin. For example, they could readily trace forward the movement of the arm joint, or any other joint, from the ligament of the muscle at its junction with the bone, through its contraction by the nerve at the fiat of the will, by which the sinew of the muscle, fastened at the opposite side of the joint, is pulled, and the joint bent;—or they could trace backward any of the operations of the senses,—the sight, for example, from the object seen, through the coats of the eye, to the inverted picture of it formed upon the retina, which communicated the sensation to the optic nerve, by which it was conveyed to the brain. In all which they invariably succeeded, and shewed that the whole was clearly and connectedly understood.

"When this had been minutely and extensively done on the several parts of the body, some medical gentlemen who were present were requested to catechise them on any of the topics they had learnt, for the purpose of assuring themselves and the audience that the children really and familiarly understood all that they had been catechised upon. One of the medical gentlemen, for himself and the others present, then stated publicly to the meeting, that the extent of the children's knowledge of this difficult science was beyond any thing that they could have conceived. And afterwards affirmed, that he had seen students who had attended the medical classes for six months, who did not know so much of the human body as these children now did."

This experiment became more remarkable from a circumstance which took place within a few days afterwards, and which tended still more strongly to prove the permanence and efficiency of this method of imitating Nature; shewing, not only that truth when communicated as Nature directs, is easily received, and permanently retained upon the memory, but that all such truths [Pg 231] when thus communicated, become more and more familiar to the mind, and more decidedly

under the controul, and at the command of the will. The circumstance is thus recorded in the account of the experiment[20] from which we have already quoted.

"At the close of the meeting, Mr Gall took farewell of his young friends, not expecting to have the pleasure of seeing them again; and (after a promised visit to Ravenstile,) he proceeded on the following Thursday to Rostrevor, where he found a numerous audience, (publicly called together by Lady Lifford, the Rev. Mr Jacobs, and others, to receive him,) already assembled.

"Here, in the course of teaching a class of children brought to him for the first time, and explaining the nature and capabilities of the system, reference was made to the above experiment only a few days before in their neighbourhood at Newry. Two gentlemen,[21] officially and intimately connected with the Kildare Place Society of Dublin, being accidentally present, were at their own desire introduced to Mr Gall by a clerical friend after the close of the exercises. The circumstances of the Newry experiment, which had been mentioned during the meeting, were strongly doubted, till affirmed by the clerical friend who introduced them; who, having been present and witnessed it, assured them that the circumstances connected with the event had not been exaggerated. They then stated, that it must of necessity have been a mere transient glimpse received of the science by the children; which, being easily got, would be as easily lost; and that its evanescent nature would without all question be found, by their almost immediately having [Pg 232] forgotten the whole of what had been told them. Mr Gall, however, assured them, that so far from that being the case, he was convinced, from long experience, that the information communicated would be much more lasting than that received in any other way. That the impressions, so repeatedly made upon their minds by the *catechetical exercises*, would remain with them very likely through life; while the effect of the *analytical mode*, by which he had linked the whole together, would prevent any of the important branches from ever being separated from the rest. If, therefore, they remembered any of the truths, they would most probably remember all. And besides, he shewed, that the daily use, in the ordinary business of life, which they would find for the lessons from the truths taught, would revive part, and perhaps the whole, upon their memories every day. But as it was of importance that they should be satisfied, and to set the matter at rest, he agreed *to call the boys unexpectedly together* at another public meeting in Newry, where they might be present and judge for themselves; and without seeing or talking with the boys, he would examine them again publicly, and as extensively as before; when he was convinced they would shew, that the whole was as fresh on their memories as when they at first received it. In short, that they would be able to undergo the most searching ordeal, with equal, if not greater ease, than they had done formerly.

"This was accordingly done. A meeting took place next day, equally respectable, and perhaps more numerous than the former, to which the boys were brought from their school, without preparation, or knowing what they were to be asked. They were then more fully and searchingly examined than at first; and there being more time, they were much longer under the exercise. It was then found, that the information formerly communicated was not only remembered, but that [Pg 233] the several truths were much more familiar, in themselves and in their connection with each other, than they had been at the former meeting. This had evidently arisen from their own frequent meditations upon them since that time, and their application of the several lessons, either with one another, their parents, or themselves. The medical gentlemen were again present, and professed themselves equally pleased."

From the number and variety of these facts, which might be indefinitely extended, it is obvious, that a new path lies open to the Educationist, which, as yet, has been scarcely entered upon. The same amount of success is at the command of every teacher who will follow in the same course, and keep rigidly in the path pointed out to him by Nature.

**FOOTNOTES:**

[18] Note P.

[19] Note Q.

[20] Complete Directory for Sunday School Teachers, vol. i. p. 267, and Effects of the Lesson System, p. 37.

[21] Counsellor Jackson, M. P. Secretary to the Kildare Place Society, and Mr Hamilton, brother-in-law to the Duke of Wellington, one of the Committee.

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## CHAP. VII.

### *On the Imitation of Nature in Teaching the Practical Use of Knowledge.*

The third step in the educational process of Nature we have found to be, the training of her

pupil to the practical use of his knowledge.—All her other processes, we have seen from numerous circumstances, are merely preparatory and subservient to this; and therefore, the attempt at imitation here by the teacher is of corresponding importance. The practical application of knowledge must be the great end of all the pupil's learning; and the parent or teacher should conduct his exercises and labours in such a manner as shall be most likely to attain it. The powers of the mind are to be cultivated;—but they are to be cultivated chiefly that the pupil may be able to collect and make use of his knowledge:—And knowledge is to be pursued and stored up;—but this is to be done that it may remain at his command, and be readily put to use when it is required. To suppose any thing else, is to suppose something directly opposed to [Pg 234] all the indications of Nature, and to the plainest suggestions both of reason and experience.

If in this department then, the teacher is to imitate Nature with effect, there are two preliminary objects of which he ought never to lose sight. The first is, that he studiously select from the numerous subjects which may form the staple of education, those only, or at least chiefly, which are to be most useful, and which may most easily and most frequently be put to use by the pupil;—and the second is, that whatever be the truth or the subject taught, the child should, at the time of learning, be instructed in the methods and the circumstances in which it may be used. To neglect these preliminary points, is really to betray the cause of education, and, besides inflicting a lasting injury on the young, to deceive the public.

In our enquiries into Nature's method of applying knowledge, we found, in a former chapter, that she employs two distinct agencies in the work. The one we denominated the Natural, or Common Sense; and the other is the Conscience, or Moral Sense:—the one appearing to regulate our knowledge in so far as it refers to the promotion of our own personal and physical comforts; and the other, in so far as it refers to the rights and the well-being of others, and to our own moral good. The method which she employs in working out these two principles, is, as we before explained, very nearly the same; consisting of the perception of some useful truth,—the deduction of a lesson from that truth,—and the application of that lesson to corresponding circumstances. On that account, our attempts to imitate her operations as exhibited by the one, will, in form, be nearly the same as in the other. We shall here, therefore, attend to the methods by which Nature may be successfully imitated under both agencies, and shall then state a few illustrations and facts which are more peculiarly applicable to each in particular.

Before doing this, however, we cannot help once more pressing upon the mind of all connected [Pg 235] with education, the great importance—the necessity—of that part of the subject upon which we are now to enter. We have said, and we again repeat, that *this* is education; and every thing else taught to a child is, or ought to be, either preliminary or supplementary;—*belonging* to education, perhaps, but not education itself. It is *practice*, and not *theory*, that constitutes the basis of all improvement, whether in the arts, or in morals and religion; and it is to this practical application of what he learns, that every child should be trained, by whatever name the mode of doing so may be known. All our blessings are destined to come to us by the use of proper means; and this general principle applies both to temporal and spiritual matters. Now "the use of means," is only another mode of expressing "the practical application of knowledge." And if so, what are we to think of the philosophy or the candour of the person, who is apparently the friend of education, but who remains indifferent or hostile to the thing itself, merely because it is presented to him under another name. He may be a zealous advocate for the spread of knowledge;—but that is not education.—Knowledge is but the *means*,—the application of it is the *end*; and when therefore he stops short at the communication of knowledge, while he is indifferent to the teaching of its use, he endangers the whole of his previous labour. One single truth put to use, is of more real value to a child than a thousand are, as long as they remain unused; and of this, every friend of the young ought to be convinced. Our health, our food, and our general happiness depend, not on knowledge *received*, but on knowledge *applied*; and therefore, to teach knowledge that is inapplicable or useless, or to teach useful knowledge without teaching at the same time how it may be put to use by the pupil, is neither reasonable nor just. Hence the importance of our present investigation; and hence we have no hesitation in saying, that the enquiry, "How can [Pg 236] Nature be most successfully imitated in her application of knowledge?" is the most momentous question that can be put by the teacher; and a successful answer will constitute the most precious boon that can be afforded to education. To assist in this enquiry is the design of the present chapter; and we shall accordingly examine a little more in detail the circumstances that take place in the experience of the young, when they are induced to apply their knowledge under the guidance of Nature, and without another teacher.

For this purpose, let us suppose two children about to cross a piece of soft ground. The one goes forward, and his foot sinks in the mud. Does the other follow him? No indeed. The most stupid child we could find, if within the limits of sanity, would immediately stand still, or seek a passage at another point. Here then is an example of the way in which children, while entirely under the guidance of Nature, make use of their knowledge, by applying the principle of which we are here speaking in cases of urgency and danger; and we shall now endeavour to analyse the process, that we may the more readily arrive at some exercise, by which it may be artificially imitated, whether the application be urgent and required at the moment or not.

We have supposed one child going forward on the soft ground, while the other is slowly following him. When the foot of the first sinks, the other instantly stands still; and a spectator can perceive, better perhaps than the child himself, that something like the following mental process takes place on the occasion. The child thinks with himself, "Tom's foot has sunk; if I go forward, I also will sink; I will therefore stand still, or cross at another place." This is an exact parallel to thousands of similar instances which come under the notice of parents and others every day; and [Pg 237]

is a process quite familiar to adults who have paid any attention to the operation of their own minds when similarly circumstanced. When it is analysed, we find it to consist, as shewn in a former chapter, of three distinct parts, not one of which can be left out if the effect is to be produced. There is always, at the commencement of such an operation, the knowledge of some fact; "Tom's foot has sunk." There is, secondly, an inference or lesson drawn from this knowledge, "If I go forward, I also will sink." And there is, thirdly, the practical application of that lesson, or inference, to the child's present circumstances: "I will stand still, or cross at another place."

It is this process, or one in every point similar, that takes place in the mind, either of the young or the old, whenever they apply the facts gleaned by observation or experience for the guidance of their conduct. Now what we are at present in search of, is an exercise applicable to *reading*, as well as to observation;—to the *school*, as well as to the play ground or the parlour;—and to knowledge whose use may not be required at the instant, as well as that to which we are driven by necessity.

The desideratum here desired is to be found by the teacher in the method, now very extensively known, of drawing lessons from useful truths, and then applying them to the future probable circumstances of the pupils. For example, when a child reads, or is told that Jacob was punished by God for cheating his brother and telling a lie, the great object of the parent or teacher is to render these truths *practical*,—which the question, "What does that teach you?" never fails to do. The child, as soon as he knows the design of his teacher in communicating practical truths, and is asked the above question, will tell him, that he ought never to cheat his neighbour, or tell a lie. The application of these lessons, when thus established as a rule of duty founded on Scripture, is as extensive as the circumstances in which they may be required are various;—and the teacher [Pg 238] has only to suppose such a case, and to ask his pupil, if he were placed in these circumstances, what he should do. The dullest of his children will at once perceive the duty, and the source from which he derives confidence in performing it.

There is no difficulty, as we have seen, in drawing and applying practical lessons in cases of urgency, where experience and the common sense of the individual prompt him to it;—and this attempt to imitate Nature in less urgent cases, and especially in hearing, or in the more artificial operation of reading, has been found in experience to be completely successful. We shall endeavour to point this out by a few familiar examples.

Let us for this purpose suppose, that one of the boys formerly mentioned is accompanied by his teacher, instead of his companion, and is approaching the soft ground which lies between them and the house. Before they arrive at the spot, his teacher tells him, that the marsh before them is so soft that even a child's foot would sink if he attempted to tread upon it. The boy might hear, and perfectly understand the truth, and yet he might not at the time think of the use to which it ought to be put. But if the teacher shall immediately add, "What does that teach you?"—his attention would instantly be called, not so much to the truth itself, as to the uses which ought to be made of it, and his answer in such a plain case would be ready, "We must not cross there, but seek a road to the house by some other way." Now here the fact was verbally communicated; and although the object was in sight, and the use of the fact might in some measure have been anticipated so as to suggest the answer, yet a little consideration will shew, that a similar effect would have been produced by the question, had the parties been in the house, or had the truth been derived from reading, and not from the oral communication of the teacher.

It is the want of something like this in the acquisition of truth by books, which renders that kind [Pg 239] of knowledge in general of so little practical benefit. The truths and facts learned while attending school, are too often received as mere abstractions, without reference to their uses, or to the personal application of those uses to the circumstances of the child or his companions. Events daily occur in which the pupil's knowledge might be of important service;—but the benefits to be derived from it not having been taught, and the method of applying the facts which he has acquired by reading not having been explained,—the knowledge and its uses are seldom seen together, and the practical benefit of the teaching is accordingly lost. This at once accounts for the very remarkable circumstance, that children, and not unfrequently adults also, derive far more benefit from the scanty knowledge which they have gleaned by observation and experience, than from the many thousands of highly useful facts which have again and again been pressed upon their notice by reading and study. In almost every case Nature prompts us, as we have seen, to turn to our own benefit the knowledge which she has imparted; but as the mode of teaching reading, which is the *artificial* method of acquiring information, often overlooks the use we are to make of it, we remain satisfied with the knowledge itself, and do not think of its application. To illustrate this fact in some measure, let us suppose a basket of filberts set down for the use of a company of boys, and that one of them tries to crack the shells with his front teeth. He fails. But he sees his companions put the nuts farther back in the mouth, and succeed. Does he lose his share, by continuing to misapply the lever-power provided for him by Nature?—No indeed. He, by a single observation, at once draws and applies the lesson;—he immediately cracks his nuts as readily as his companions, and he continues to do so all his lifetime after. But the same boy may have, that very forenoon, been reading a treatise on the power of the lever, [Pg 240] and might read it again and again without considering himself at all interested in the matter, or thinking it probable that he ever would. His reading, without the application we are here recommending, would never have led him to perceive the slightest similarity between the fulcrum of the lever, and the insertion of his jaw; or any connection between the lesson of the school, and the employment of the parlour:—But that would.

This is but one of a thousand examples that might be given, of the evils arising from the non-application of knowledge in reading, and which are applicable, not to children merely, but also to

adults. The drawing and applying of lessons, the exercise which we are here recommending, has been found a valuable remedy for this defect in ordinary reading. The object of the teacher by its use, is to accomplish in the pupil by *reading*, what we have shewn Nature so frequently does by *observation*;—that is, to train the child to apply for his own use, or the use of others, those truths which he acquires from his *book*, in the same way that he does those which he derives from *experience*. To illustrate this, we shall instance a few cases of every day occurrence, in which the question, "What does this teach you?" when supplemented to the fact communicated, will almost invariably answer the purpose desired, whether the truth from which the lesson is to be drawn, has been received by observation, by oral instruction, or by reading.

When an observing well-disposed child sees a school-fellow praised and rewarded for being obliging and kind to the aged or the poor, there is formed in the mind of that child, more or less distinctly, a resolution to follow the example on the first opportunity. Here is the fact and the lesson, with the application in prospect. This whole feeling may be faint and evanescent, but it is real; and it only wants the cultivating hand of the teacher to arrest it, and to render it permanent. [Pg 241] Accordingly, if on the child hearing the praise given to his companion for being kind and obliging to the poor, he had at the time been asked, "What does that teach you?" the lesson suggested by Nature would instantly have assumed a tangible form; and in communicating the answer to the teacher, both the truth and the lesson would have been brought more distinctly before the mind, and the reply, "I should be kind and obliging to the poor," would tend to fix the duty on the memory, and would be a good preparation for putting it in practice when the next occasion should occur.

Again, if another thoughtful and well disposed child sees a companion severely punished for telling a lie, the question, "What does that teach me?" is in some shape or degree formed in his mind, and his resolution, however faint, is taken to avoid that sin in future. This, it is obvious, is nothing more than a practical answer to the above question, forced upon the child by the directness of the circumstances, but which would not have so readily made its appearance, or produced its effect, in cases of a less obtrusive kind, or in one of more remote application; and every person must see, that the beneficial effects desired would have been more definite, more effectual, and much more permanent, had this faint indication of Nature's intention been followed up by orally asking the question at the child, and requiring him audibly to return an answer.

Let us once more suppose a child in the act of reading the history of Cain and Abel, in the manner in which it is commonly read by the young, and that the child thoroughly understands all the circumstances. He may be deeply interested in the story, while the uses to be made of it may not be very clearly perceived. But if, after reading any one of the moral circumstances, such as "Cain hated his brother," or after having it announced to him by the teacher, he was asked, "What does that teach you?" the practical use of the truth would at once be forced upon his mind, [Pg 242] and he would now very readily answer, "It teaches me that I should not hate my brother." In this case also, it is quite obvious, that without such a question having been proposed, and the answer to it given, the practical uses of the truth recorded might have been altogether overlooked; and even although they had not, still the question and its answer will always have the effect of making them stand out much more prominently before the mind, and will enable the memory to hold them more tenaciously, and bring them forth more readily for practice, than if such an operation had been neglected. Hence the great importance of training the young by this exercise early to perceive the uses of every kind of knowledge, particularly Scriptural knowledge; because the habit formed in youth, will continue to render every useful truth of practical benefit during life.

We may remark here, that the exercise is not limited in its application to the young. For if an adult were first told, that the squalid beggar before him, though once respectable and rich, had made himself wretched by a course of idleness and dissipation, and were then asked, "What does that teach you?" he would instantly perceive the lesson, and would be stimulated to apply it. When, in like manner, the farmer is told that his neighbour has ruined himself by over-cropping his ground; or the iron master, that the use of the hot-blast has doubled the profits of his rival; a similar question would at once lead to the legitimate conclusion, and most likely to the proper conduct.

In all these examples, the operation of mind which we have endeavoured to describe, is so exceedingly simple, that it is perhaps difficult to decide how much is the work of Nature, and how much belongs to the exercise here recommended. This at once proves its efficiency, as an imitation of her process, in following her in the path which she has here pointed out; and it at the [Pg 243] same time recommends itself as strictly accordant with observation and experience. The teacher then, in order to render the knowledge he communicates useful, has only to do regularly and by system, that which, under the direction of Nature, every intelligent and enquiring mind in its best moments does for itself. Wherever a useful truth has been communicated in the school or family, or a moral act or precept has been read or announced, the question by the parent or the teacher, "What does that teach you?" will lead the pupil to reflection, not only on its nature, but on its use; and the ability to do so, as we shall afterwards see, may be acquired by almost any individual with ease. Regular training in this way, leads directly to habits of reflection and observation, which are of themselves of great value; but which, when found acting in connection with the desire and ability to turn every truth observed into a practical channel, become doubly estimable, and a public blessing. The pupil therefore ought early to be trained of himself to supplement the question, "What does this teach me?" or, "What can I learn from this?" to every circumstance or truth to which his attention is called; because the ability to answer it forms the chief, if not the only correct measure of a well educated person. In proof of this it is only necessary to remark,

that as it is not the man who has accumulated the greatest amount of anatomical and surgical knowledge, but he who can make the best use of it, that is really the best surgeon; so it is not the man who has *acquired* the largest portion of knowledge, but he who *can make the best use* of the largest portion, that is the best scholar. Hence it is, that all the exercises in a child's education should have in view the practical use of what he learns, and of what he is to continue through life to learn, as the great end to which all his learning should be subservient.

[Pg 244] The moral advantages likely to result from the general adoption of this mode of teaching useful knowledge are exceedingly cheering, and the only surprise is, that it has been so long overlooked. That the principle, though not directly applied to the purposes of education, was well known, and frequently practised by our forefathers, appears obvious from many of their valuable writings. One beautiful example of its application is familiar to thousands, though not always perceived, in the illustration given of the Lord's prayer towards the close of the Assembly's Larger and Shorter Catechisms. The study of the lessons there drawn from the truths stated or implied in that prayer, will afford a better idea of the value of this mode of teaching, than perhaps any farther explanation we could give, and to these therefore we refer the reader.

Before closing these general observations upon the value and necessity of this method of training the young to the practical use of knowledge, there is a circumstance which should not be omitted, as it tends to double all the advantages of the exercise, both to the teacher and the pupil. It will be found in general, especially in morals, that every practical lesson that is drawn from a truth or passage, actually embodies two,—both of which are equally legitimate and connected with the subject. There is always a *negative* lesson implied, when the *positive* lesson is expressed; and there is in like manner a *positive* implied, whenever it is the *negative* that is expressed. As for example, when the child, from the history of Cain and Abel, draws the negative lesson that he should *not hate* his brother; the opposite of that lesson is equally binding in the positive form, that he should *love* his brother. And when, from the history of Job, the positive lesson is drawn that we ought to be patient; the negative of that lesson becomes equally binding, [Pg 245] and the child may, by the very same fact, be taught and enjoined not to be fretful, discontented, or impatient, during sickness or trouble. Of this method of multiplying the practical uses of knowledge, we have a most appropriate example in the Assembly's Larger and Shorter Catechisms, where the illustrations given of the decalogue are conducted upon this important principle, and in a similar way.

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## CHAP. VIII.

### *On the Imitation of Nature in Teaching the Use of Knowledge by means of the Animal or Common Sense.*

A large portion of what has been advanced in the foregoing chapter, has reference to the practical application of all kinds of knowledge, whether by the Animal or Moral sense; and we shall here offer a few additional remarks on the teaching of those branches which are more immediately connected with the former.

When a person is sent to learn an art or trade, such as a carpenter, he is not sent to hear lectures, or to get merely an abstract knowledge of the several truths connected with it; but he is sent to practise the little knowledge that he is able of himself to pick up. His is a practical learning; ninety-nine parts in every hundred being employed in the practice, for one that is employed in acquiring the abstract principles of his occupation. When, on the contrary, a child is sent to school, to prepare him for this practical application of his knowledge, the former proportions are generally reversed, and ninety-nine parts of his time and labour are taken up in attaining abstract knowledge, for one that is occupied in assisting him to reduce it to practice. Both modes of teaching the boy are obviously wrong. He would, when sent to it, learn his business in much less time by a previous acquaintance with its principles; and all these ought to [Pg 246] have been furnished him as a part of his general knowledge while he attended the school. Such information, indeed, ought to have formed a large portion of his education;—and it will be a matter of surprise to every one who closely considers the subject, how soon and how easily the principles, even of so complicated a trade as a carpenter, may be acquired when they are taught in the right way, and at the proper time. A few of the simplest principles in mechanics practically learned,—a knowledge of the strength and adhesion of bodies,—of the nature of edge tools,—and the importance of accuracy and caution, might have been made familiar to him while attending his studies; and if carefully and constantly reduced to practice, these would have been of the greatest service to him when called to the work-shop.

The methods by which natural philosophy ought to be taught in schools, must partake of all the laws which Nature employs in the several parts of her teaching. Individuation, Grouping, and

especially Analysis, must be rigidly attended to. By dividing all the subjects of general knowledge into the two grand divisions of Terrestrial and Celestial, and these again into their several parts, the whole field of useful knowledge would be mapped out, and connected together, so that each subject would occupy a distinct place of its own, and be readily found when it was required. The facts, or at least the most useful facts connected with each of these, would very soon be communicated; and when turned into a popular and useful form, by drawing and applying the corresponding lessons, the ease and delight of laying up these precious stores of useful knowledge by children, will not be easily conceived by those who have not witnessed it.

With respect to *the ease* with which this method of communicating knowledge can be accomplished, we may remark in general, that when a principle has been explained, and has become familiar to the child, all the phenomena arising out of it, when pointed out, are readily [Pg 247] perceived and retained upon the memory in connection with it. For example, by a knowledge of the principle which teaches that fluids press equally on all sides, when considered in connection with the weight of the atmosphere, a child, with very little trouble, would be put into the full possession of the cause of many facts in natural philosophy, exceedingly dissimilar in their appearance, but which are all mastered with ease and intelligence by a knowledge of this law. When the principle and its mode of working have been explained, the child is provided with a key, by which he may, in the exercise of his own powers, unlock one by one all the mysterious phenomena of the air and common pump, the cupping-glass, the barometer, the old steam and fire engine, the toy sucker and pop-gun, the walking of a fly on the ceiling, the ascent of smoke in the chimney, the sipping of tea from a cup, the sucking of a wound, and the true cause of the inspiration and expiration of the air in breathing. To teach these singly, would obviously be exceedingly troublesome to the teacher, and laborious for the child; but when thus linked together, as similar effects from the same cause, they are understood at once, and each of them helps to illustrate and explain all the others. They are received without confusion, and are remembered without difficulty. All this may in general be done even with children, as we shall immediately prove, by the method recommended above, of requiring, after the illustration of the principle, the lessons which it is calculated to teach.

The results of this simple method of imitating Nature in one of the most valuable of her processes, have been found remarkably uniform and successful; and when it shall be regularly brought into operation in connection with the other parts of the system, it promises to be still more valuable and extensive. But even already, with all the disadvantages of time, place, and [Pg 248] persons, the importance and efficiency of the exercise have been highly satisfactory. We shall shortly advert to a few instances of its success, which have been publicly exhibited and recorded.

The criminals in the jail of Edinburgh, after three weeks teaching, had acquired a considerable degree of expertness in perceiving and drawing lessons from the moral circumstances which they read from Scripture. In the report of that experiment, the examinators say, "They gave a distinct account, (from the book of Genesis,) of the prominent facts, from Adam, down to the settlement in Goshen, and shewed by their answers, that the circumstances were understood by them, in their proper nature and bearings. From each peculiar circumstance, they deduced an appropriate lesson, calculated to guide their conduct, when placed in a like, or analogous situation. It is within the truth to allege, that in this part of their examination, they submitted upwards of fifty palpable lessons, that cannot fail, we would conceive, hereafter to have a powerful influence upon their affections and deportment."

In the experiments both in Newry and London, the children were found quite adequate to the exercise; and in the latter instance, three children, who at their first lesson did not know they had a soul, were able to perceive and to draw lessons from almost any moral truth or fact presented to them. This they did repeatedly when publicly examined by the Committee of the London Sunday School Union, in presence of a large body of clergymen, and a numerous congregation in the Poultry Chapel. But we shall at present direct attention more particularly to the children selected from the several schools in Aberdeen, as given in the Report by Principal Jack, and the Professors and Clergymen in that place. After mentioning, that these children, so very ignorant only eight days before, had acquired a thorough acquaintance with the leading facts in Old [Pg 249] Testament History, they say, "From the various incidents in the Sacred Record, with which they had thus been brought so closely into contact, they drew, as they proceeded, a variety of practical lessons, evincing, that they clearly perceived, not only the nature and qualities of the actions, whether good or evil, of the persons there set before them, but the use that ought to be made of such descriptions of character, as examples or warnings, intended for application to the ordinary business of life.

"They were next examined, in the same way, on several sections of the New Testament, from which they had also learned to point out the practical lessons, so important and necessary for the regulation of the heart and life. The Meeting, as well as this Committee, were surprised at the minute and accurate acquaintance which they displayed with the multiplicity of objects presented to them,—at the great extent of the record over which they had travelled,—and at the facility with which they seemed to draw useful lessons from almost every occurrence mentioned in the passages which they had read."

They were able also to apply this same principle,—the practical application of useful knowledge,—to the perusal of civil history, and also biography. The report states, that "they were examined on that portion of the History of England, embraced by the reign of Charles I. and the Commonwealth; and from the details of this period, they drew from the *same circumstances*, or announcements, political, domestic, and personal lessons, as these applied to a nation, to a family, and to individuals;—lessons which it ought be the leading design of history to furnish,

though, both by the writers and readers of history, this Committee are sorry to say, they are too generally overlooked.

"They were then examined on biography,—the Life of the late Rev. John Newton being chosen for that purpose; from whose history they also drew some very useful practical lessons, and seemed very desirous of enlarging, but had to be restrained, as the time would not permit." [Pg 250]

The practicability and the importance of teaching children to apply the same valuable principle to every branch and portion of natural philosophy were also ascertained. The same report, after stating the fact, that the children scientifically described to the meeting numerous objects presented to them from the several kingdoms of Nature, goes on to say, that "here also they found no want of capacity or of materials for practical lessons. A boy, after describing copper as possessing poisonous qualities, and stating, that cooking utensils, as well as money, were made of it, was asked what practical lessons he could draw from these circumstances, replied, That no person should put halfpence in his mouth; and that people should take care to keep clean pans and kettles."

The common school boys in Newry also found no difficulty in the exercise, as applied to the abstruse and difficult sciences of anatomy and physiology. The account of that experiment, says, that they were "examined as to the *uses* which they ought to make of all this information, by drawing practical lessons from the several truths. Accordingly, announcements from the different branches of the science were given, from which they now very readily drew numerous and valuable practical lessons, several of which were given at this time of themselves, and which had not been previously taught them. These were drawn directly from the announcements; and all, according to their nature, calculated to be exceedingly useful for promoting the health, the comfort, and the general happiness of themselves, their friends, or their companions."

But by far the most extensive and satisfactory evidence of the value and efficiency of this exercise, in the mental and moral training of the young, was afforded by the experiment undertaken at the request of the Lesson System Association of Leith, and conducted in the Assembly Rooms there, in the presence of the Magistrates and Clergy of that town, of Bishop Russell, Lord Murray, (then Lord Advocate,) and a numerous meeting of the friends of education. The children were those connected with a Sabbath school, who had been regularly trained by their teacher, a plain but pious workman of the town, to draw lessons every Sabbath from the several subjects and passages of Scripture taught them. To give all the specimens which afford evidence of the value and efficiency of this exercise in the education of children, would be to transcribe the report of the Association; we shall therefore confine ourselves to a few of the circumstances only, which were taken in short-hand by a public reporter who was present. [Pg 251]

After some important and satisfactory exercises on the being and attributes of God, from which the children drew many valuable practical lessons, it is said, that the examinator "expressed his entire satisfaction with the result, and remarked, that he himself was astonished, not only at the immense store of biblical knowledge possessed by these children, but the power which they possessed over it, and the facility with which they could, on any occasion, use it in 'giving a reason for the hope that is in them.' He then proceeded to the next subject of examination which had been prescribed to him, which was, to ascertain the extent of their mental powers and literary attainments, which would be most satisfactorily shown by their ability to read the Bible profitably; and for this purpose he requested that some of the clergymen present would suggest *any* passage from the New Testament on which to exercise them. The Rev. Dr Russell (now Bishop Russell,) suggested the parable of the labourers hired at different hours, Matt. xx. 1-16. Mr Gall accordingly read it distinctly, verse by verse, catechising the children as he proceeded, and then made them relate the whole in their own words, which they did most correctly. [Pg 252]

"Mr Gall then selected some of the verses, and called upon them to separate the circumstances, or parts of each verse, and to state each as a separate proposition. This also they did with the greatest ease; and in some cases a variety of divisions were brought forward, thus proving the high intellectual powers which they had acquired, and the ease with which they could analyse any passage, however difficult.

"It was next to be ascertained what power the children had acquired of drawing lessons from Scripture; and for this purpose, Mr Gall, in order to husband the time of the meeting, confined the children's attention to one verse only, and proposed to submit each of the moral circumstances contained in that verse, one by one, as they themselves had divided it. The following are the lessons drawn by the children, as taken down in short-hand by the Reporter.

"*Mr G.*—The householder invited labourers at the eleventh hour;—what does that teach you?—It teaches us, that God at various seasons calls people to his church.—It teaches us, that we ought never to despair, but bear in mind the language of Jesus to the repentant thief on the cross,—'To-day shalt thou be with me in paradise.'—It teaches us, that we ought not to boast of to-morrow, since we know not what a day or an hour may bring forth.—It teaches us, that time is short, and that life is the only period for preparation and hope.—It teaches us, that we ought to be prepared,—have our loins girt, and our lamps burning; for we know neither the day nor the hour wherein the Son of Man cometh.—It teaches us, that we ought to number our days, and apply our hearts to heavenly wisdom.—It teaches us, that we ought not to put off the day of repentance; because for every day we put it off, we shall have one more to repent *of*, and one less to repent *in*.—It teaches us, [Pg 253]

'That life is the season God hath given
To fly from hell, and rise to heaven;
That day of grace fleets fast away,

And none its rapid course can stay.'

"Mr Gall here requested the children to pause for a moment, that he might express the high gratification he felt at the fluency, the readiness, and the appropriateness of the lessons which they had drawn. He was only afraid that they had inadvertently fallen upon a passage with which the children were familiar, by having had it recently under their notice; and he therefore requested Mr Cameron to state to the meeting whether this was really the case or not. Mr Cameron rose and said, that what the meeting now saw was no more than could be seen any Sunday in the Charlotte Street School. They had not had any preparation for this meeting; and he did not remember of ever having had this passage taught in the school. He would recommend that the children be allowed a little freedom; and when they were done with that announcement, let any other be taken, for it was the same to them whatever subject might be chosen.

"Mr Gall accordingly repeated the announcement again, and called on them to proceed with any other lessons from it which occurred to them. They accordingly commenced again, and answered as follows: It teaches us, that we ought to remember our Creator in the days of our youth, while the evil days come not, nor the years draw nigh in which we shall say we have no pleasure in them.—It teaches us, that we ought to prepare for death; to gird up our loins, and trim our lamps, lest it be said unto us in the great day of the Lord, when he maketh up his jewels, 'Depart from me, ye cursed, into everlasting fire, prepared for the devil and his angels.'—It teaches us so to conduct ourselves, that whether we live we live unto the Lord, and whether we [Pg 254] die we die unto the Lord; and that whether we live therefore or die, we may be the Lord's; for to that end Christ both died, and rose, and revived, that he might be Lord both of the dead and the living.[22]—It teaches us to improve our time lest we find that the harvest is past, and the summer ended, and us not saved.—It teaches us, that we ought to study, in that whether we eat or drink, or whatsoever we do, we do all to the glory of God.—It teaches us, that we ought to endeavour to secure an interest in Christ in time.—It teaches us, that delays are dangerous.—It teaches us, that the day of the Lord cometh like a thief in the night, and that when sinners shall say, 'Peace and safety,' sudden destruction cometh upon them.—It teaches us, that we ought to acquaint ourselves early with God; and that we ought to walk circumspectly, not as fools, but as wise, redeeming the time, because the days are evil.—It teaches us, that we ought to seek the Lord while he may be found, and call upon him while he is near; that the wicked ought to forsake his way, and the unrighteous man his thoughts, and let him return unto the Lord, who will have mercy upon him, and to our God, who will abundantly pardon.—It teaches us to improve our time; and to bear in mind, that though patriarchs lived long, the burden of the historian's tale is always, 'and they died.'—It teaches us, that we ought not to allow pleasures and enjoyments to [Pg 255] interfere with, or overcome, our more important duty of seeking God.—It teaches us, that we are never too young to pray, and to remember that God says, 'Now;'—the devil, 'To-morrow.'

"Mr Gall here took advantage of a short pause, and said, 'We shall now change the announcement. Give me a few lessons from the fact stated in this parable, that *when the husbandman invited the labourers into the vineyard at the eleventh hour, they accepted the invitation*.—What does that teach you?'—It teaches us, that we ought to accept the invitation of Jesus to come with him, 'Ho! every one that thirsteth, come ye to the waters, and he that hath no money; come ye buy and eat; yea, come, buy wine and milk without money, and without price. Seek ye the Lord while he may be found; call upon him while he is near. Let the wicked forsake his way, and the unrighteous man his thoughts, and let him return unto the Lord, who will have mercy upon him, and to our God, for he will abundantly pardon.'—It teaches us, that we ought to show a willingness to accept the invitation of Christ, since 'he is not willing that any should perish, but that all should come unto him and live.'—It teaches us, that we ought to accept the invitation of Christ, since we are informed in the Scriptures, 'that whosoever cometh unto him he will in no ways cast out.' It teaches us, that we ought to accept of the invitation of Christ; for the Bible informs us, that the invitation is held forth to all; 'for whosoever will, let him take of the waters of life freely.'—'Come unto me, all ye that labour and are heavy laden, and I will give you rest.'—It teaches us, that we ought not to hesitate in accepting the invitation of Christ; for God says he will not always strive with man.

"Mr Gall here again expressed not only his satisfaction, but his astonishment, at the success with which Mr Cameron had taught the Scriptures to these children. This exhibited itself in two [Pg 256] ways; *first*, in enabling them to draw lessons from any passage of Scripture; and *second*, in having so disposed of what Scripture they had already been taught, that whenever a doctrine or duty was to be brought before them, scriptural declarations crowded around them 'as a light to their feet, and a lamp to their path.' He himself had no doubt that the children were no more prepared upon this passage than upon any other; but it would exhibit this fact more satisfactorily, if *another* passage were selected, which he requested some of the gentlemen present to do.

"The clergymen present accordingly requested Mr Gall to try the concluding portion of the second chapter of Luke, which details Christ's visit to Jerusalem at twelve years of age. After having read and catechised the children on this passage, as he had done on the former, he proceeded at once to call for lessons. Mr Gall gave us the announcement that *'Joseph and Mary worshipped God in public*,' and asked for one or two lessons from this? It teaches us, that we ought to worship God both in public and in private.—It teaches us, that no trifles ought to hinder us from worshipping God.—One child quoted the following verse:—

'Come then, O house of Jacob, come,
  And worship at his shrine!
And walking in the light of God,
  With holy beauties shine.'

"Mr Gall then said, Let us change the announcement: 'Joseph and Mary went regularly every year to the feast of the passover?'—What does that teach you?—That teaches us, that we ought to attend the house of God regularly.—It teaches that we ought to attend church both times of the day.—It teaches us that we ought to worship God regularly; for God loveth order, and not confusion.

"Let us change the announcement again. 'Jesus attended the passover when he was twelve years of age.' What does this teach you?—It teaches us, that parents should train up their [Pg 257] children in the way they should go.—It teaches us, that learning young is learning fair.—It teaches us, that children should never be thought too young to be brought up in the fear of the Lord.—It teaches us, that children should obey their parents.—What are we to learn from their 'fulfilling the days?'—It teaches us, that we should not leave the church until the sermon is over. —It teaches us, that we ought not to disturb others by leaving the church."

Remarkable as this exhibition was of the attainment of extraordinary mental power by mere children, yet it is but justice to say, that the above is merely a specimen of the elasticity and grasp of mind which these children had acquired. Some idea of the extent of this may be formed when it is considered, that all these passages and, subjects were chosen for them at the moment, and by strangers. And it is worthy of remark, that if such an amount of mental power, and such an accumulation of knowledge, of the best and most practical kind, were easily and pleasantly acquired by children in the lowest ranks of life, of their own voluntary choice, under every disadvantage, and with no more than two hours teaching in the week; what may we not expect, when the principles here developed, are wielded and applied by those who thoroughly understand them, not for two hours, with an interval of six busy days, but every day of the week? —The prospect is cheering.

**FOOTNOTES:**

[22] At this part, the Report of the Experiment contains the following Note:—"The reader will perceive that some of the lessons diverge at times from the announcement; but it is of great importance, in an experiment of this kind, neither to omit nor amend what is wrong, but to give exactly the words that were spoken. Not the least remarkable circumstance elicited by this experiment is the fact, that these children, who know nothing of the rules of grammar, have obviously, by the mental exercise induced by the system, become pretty correct practical grammarians. The variations made in many of the passages of Scripture quoted by them show this."

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## CHAP. IX.

### *On the Imitation of Nature in Teaching the Practical Use of Knowledge by means of the Moral Sense, or Conscience.*

In a former chapter we endeavoured to collect a few facts specially connected with the moral sense, as exhibited in the young, and the methods which Nature employs, when conscience is [Pg 258] made use of for the application of their knowledge.[23] We shall in this chapter offer a few additional remarks on the imitation of Nature in this important department; but before doing so, it will be proper to clear our way by making a few preliminary observations.

No one disputes the general principle, that education is proper for man;—and if so, then education must be beneficial in all circumstances, and at every period of his life. In particular, were we to ask whether education were necessary in early childhood, and infancy, universal experience would at once answer the question, and would demonstrate, that it is much more necessary and more valuable at that season, than at any future period of the individual's life. In proof of this, we find, that enlightened restraint upon the temper, and a regulating care with regard to the conduct, are productive of the most beneficial results; while, on the contrary, when this discipline is neglected, the violence of self-will generally becomes so strong, and the checks upon the temper so weak, that the character of the child formed at this period may be such as to make him for life his own tormentor, and the pest of all with whom he is to be associated.—No one can reasonably deny this; and the conclusion is plain, that education of some kind or other is really more necessary for the infant and the child, than it is either for the youth or the man.

If this general principle be once admitted, and we set it down as an axiom that the infant and the child are to learn *something*,—it naturally follows, that we are required to teach them those useful things for which Nature has more especially fitted them; while we are forbidden to force branches of knowledge upon them of which they are incapable. Our object then, ought to be to ascertain both the positive and the negative of this proposition; endeavouring to find out what the [Pg 259] infant and child *are* capable of learning, and what they *are not*. Now it is an important fact, not

only that infants and young children are peculiarly fitted, by the constitution of their minds and affections, for learning and practising the principles of religion and morals; but it is still more remarkable, that they are, for a long period, incapable of learning or practising any thing else. If this can be established, then nothing can be more decisive as to the intention of Nature, that moral and religious training, is not only the great end in view by a course of education generally, but that it is, and ought always to be, the first object of the parent and teacher, and the only true and solid basis upon which they are to build all that is to follow. Let us therefore for a moment enquire a little more particularly into this important subject.

When we carefully examine the conduct of an enlightened and affectionate mother or nurse with the infant, as soon as it can distinguish right from wrong and good from evil, we find it to consist of two kinds, which are perfectly distinct from each other. The one regards the comfort and physical welfare of the child;—the other regards the regulation of its temper, its passions, and its conduct. It is of the latter only that we are here to speak.

When this moral training of the judicious mother is examined, we find it uniformly and entirely to consist in an indefatigable watchfulness in preventing or checking whatever is evil in the child, and in encouraging, and teaching, and training to the practice of whatever is good. She is careful to enforce obedience and submission in every case;—to win and encourage the indications of affection; to check retaliation or revenge; to subdue the violence of passion or inordinate desire;—to keep under every manifestation of self-will;—and to soothe down and banish every appearance of fretfulness and bad temper. In short, she trains her young charge to feel and to [Pg 260] practise all the amiable and kindly affections of our nature, encouraging and commending him in their exercise;—while, on the contrary, she prevents, discourages, reproves, and if necessary punishes, the exhibition of dispositions and conduct of an opposite kind. This, as every one who has examined the subject knows, is the sum and substance of the mother's educational efforts during this early period of her child's progress;—and what we wish to press upon the observation of the reader is, that the child at this period is literally incapable of learning any thing else which at all deserves the name of education. He may be taught to be obedient; to be submissive; to be kind and obliging; to moderate, and even to suppress his passions; to controul his wishes and his will;—to be forbearing and forgiving;—and to be gentle, peaceable, orderly, cleanly, and perhaps mannerly. Is there any thing else?—Is there any one element of a different kind, that ever does, or ever can enter into the course of an infant or young child's education? If there be, what is it?—Let it be examined;—and we have no hesitation in saying, that if it be "education," or any thing that deserves the name, it will be found to resolve itself into some one or other of the moral qualities which we have above enumerated. If therefore children, during the earlier stages of their educational progress are to be taught at all, religion and morals *must* be, the subjects, seeing that they are for a long period capable of learning nothing else. And it is here worthy of especial notice, that in teaching religion and morals, there is a negative as well as a positive scale;—and experience has uniformly demonstrated, that if the parent or teacher neglect to improve the child by raising him in the positive side, he will, by his own efforts, sink deeper in the negative. Selfishness, as exhibited in the natural depravity of human nature, will in all such cases strengthen daily; and all the evil passions which selfishness and self-will call into exercise, will [Pg 261] then be strengthened and confirmed perhaps for life.

But while we perceive that the young are incapable of learning any thing else than what is properly termed religion and morals, we find it to be equally true, that they are peculiarly fitted and furnished by Nature for making rapid and permanent progress whenever religion and morals are made the subjects of regular instruction and training. Few who have considered carefully the facts stated above, will question the accuracy of this assertion in so far as *morals* are concerned; but there are some who will doubt the capacity of infants and children to be influenced by *religion*. Now this doubt arises from not observing the difference,—and the only difference,—that exists between morality and religion. A man or a child is *moral* when he is kind and forgiving for his own sake, and to please himself or his parents;—but he is *religious* when he does the same thing for conscience sake, and to please God. Now children, by the very constitution of their minds, are well fitted for receiving all that kind of religious knowledge which acts upon the feelings, and influences the conduct; while the heart is peculiarly sensitive, and is disposed to bend under the influence of every expression of affection and tenderness exhibited by others towards them. Their faith in all that they are told, as we have seen, is unhesitating and entire; and the capacity of their lively imaginations, for comprehending things mighty and sublime, which is too often abused by the ideas of giants, and ogres, and ghosts, is sanctified and refined by hearing of the greatness, and goodness, and love of the great Creator of heaven and of earth. When they are informed of his affection and tenderness to them individually;—of his mercy and grace in saving them from the awful consequences of sin by the substitution of his own Son for their sakes;—of his numerous benefits, and his unceasing care;—of his constant presence with [Pg 262] them though unseen; and of his hatred of sin, and his love of holiness;—there is no mixture of doubt to neutralize the effects of these truths; and they much more willingly and unreservedly give themselves up to their influence, than those who are older. Hence, the repeated declarations of our Lord, that "unless we become as little children, we shall in no case enter into the kingdom of God." A simple enumeration therefore of the benefits they have received from this kind and condescending heavenly Father, is well fitted to fill the heart of an unsophisticated child with affection and zeal,—and most powerfully to constrain him to avoid every thing that he is told will grieve and offend him, and to watch for opportunities to do what he now knows will honour and please him. This is religion; and it is peculiarly the religion of the young;—and that man or woman will be found most religious, who, both in spirit and in action, shall approach nearest to it in its purity and simplicity.

From all these considerations we see, that Nature has intended that the first part of the child's education shall consist almost exclusively of moral and religious training;—and this we think cannot be disputed by any one who considers the above facts dispassionately, or who will allow his mind to act as it ought to do under the influence of ascertained truth. We shall now therefore offer a few remarks on the manner in which this may most effectually be carried into effect; or, in other words, how Nature may most successfully be imitated in the application of knowledge by means of the moral sense.

1. The first thing to be observed here then is, that the early efforts of the parent or teacher are to be employed for disciplining the child under the influence of the executive powers of conscience.—The child is to be trained to the perfect government of his inclinations and temper, by a watchful attention on the part of the parent to every instance of their exhibition in his daily [Pg 263] conduct, the regulation of the desires, the softening down of the passions, the eradicating of evil propensities, the restraining and overcoming the exercise of self-will, the converting of selfishness into benevolence, and the cultivating and strengthening of self-controul within, and of sympathy, and forbearance, and kindness to all without. These are the great ends which the parent and teacher are to have in view in all their dealings with the child. They are, in short, to take care that their pupil be reduced to a state of enlightened submission, and uniform obedience; and for that purpose, they are to employ all the means and the machinery provided by Nature, in the use of which she has afforded them abundant examples.

In the accomplishment of these ends, *the agent* employed has much in her power. It is a delicate, as well as an important work; and here, more than perhaps in any after period of the child's educational progress, an affectionate and enlightened agency is of the greatest importance. In that constant watchfulness and exertion, necessary to check or to controul the unceasing and often unreasonable desires of a froward child, there is naturally created in the mind of a hireling or a stranger, a feeling of irritation and dislike, which nothing but enlightened philanthropy, or high moral principle, will ever be able thoroughly to overcome;—and these qualifications are scarcely to be expected in those who are usually picked up to assist the mother during this important season. In families, Nature has graciously balanced this effect, and amply provided for it, in the deep-seated and unalterable affection of the parent. The mother then is the proper agent, selected and duly qualified by Nature for superintending this important work during this early period. The out-bursts and irregularities of natural depravity in the young, must be met by an unconquerable affection, exhibited in the exercise of gentleness, guided by firmness;—of kindness and forbearance, combined with a steady and an untiring perseverance. [Pg 264] Irregularity or caprice in the nurse, may be the ruin of the morals of the child. The selection of assistance here is often requisite, and yet how few comparatively of those into whose hands children and infants are placed, possess the high qualifications necessary for this important occupation?[24] The parent who from any cause is prevented from taking charge of the superintendence of her offspring at this period, incurs a serious responsibility in the choice of her assistant; for if these qualifications be awanting, or, if they be not exercised by the nurse or the keeper, the happiness and moral welfare of the child during life are in imminent danger.

2. The child is not only to be trained to think and to act properly, but he must be trained to do so *under the influence of motives*. If this be neglected, we are not imitating Nature in her mode of applying knowledge by means of the moral sense. We have seen, as formerly noticed, that a child under the influence of conscience, has always a painful feeling of self-reproach, or remorse, after it has done wrong; and a delightful feeling of self-approval and joy, when it has done something that is praiseworthy. These are employed by Nature as powerful motives to prevent the repetition of the one, and to win the child to the frequent or regular performance of the other;—and this is their effect. In imitating her in this part of her educational process, we must in like manner follow in the spirit of this principle. There must be motives of action held out to the child; something that will tend to keep him from the commission of evil, and something that will stimulate and encourage him in doing good. Both are necessary, and therefore, neither of them should be neglected. What these motives ought to be, we shall immediately shew; but at present, we are anxious to establish the fact, that motives to do good, should be invariably employed with [Pg 265] our pupils, as well as motives to avoid evil. In ordinary life, we generally find too much of the one, and too little of the other. The fear of punishment held out to prevent mischief or evil, is common enough; but there is seldom sufficient attention paid to the providing of proper incitements to the practice of virtue. Some, indeed, have gone the length of affirming that there ought to be no such incitement held out to the young; under the erroneous idea, that actions performed for an equivalent, or in the hope of a reward, cease to be virtuous. But the same reasoning would apply with almost equal force to the fear of punishment in stimulating to duty, or in deterring from wickedness; and yet they would scarcely affirm, that the child who, for fear of the consequences, refused to break the Sabbath or to tell a lie, was equally guilty with the boy who did both. There are, no doubt, some motives to virtue that are higher and more noble than others, as there are differences in the degrading nature of punishment employed to deter men from vice. But both kinds may be necessary for different persons. The man who forgives his enemy because he seeks the approbation of his Maker and the reward promised by him, and the man who does so, because he wishes to live in quiet, and to consult his own ease;—the boy who refrains from sin lest he should offend God, and another who does the same from the fear of the rod,—are each influenced by motives, although they are of a very different kind. But it is plain, that the motives employed may be equally efficient, and that they ought to be used according to their influence upon the individual, and his advancement in the paths of morality and religion. Where the higher motive has not as yet acquired influence, the lower motive must be employed; but to refuse the employment of either would be wrong, and the sentiment which would totally exclude them, has

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no countenance in Nature, in experience, nor in Scripture. In Nature, we see the directly opposite principle exhibited; and find that the remorse of conscience consequent upon crime, in preventing future transgressions, is not more powerful in those whose moral status is low, than is the feeling of delight and joy after an act of benevolence, which excites to new deeds of charity, in those whose religious attainments are greater. Scripture, and the history of all those whom Scripture holds out for imitation, unite in teaching the same sentiment. There are many more promises in the sacred record given to virtue, than there are threatenings against vice; and the highest altitudes of holiness are not only represented as having been attained by the influence of these promises; but the persons who have already reached them, are still urged to greater exertions, and a farther advance, by the reiteration of their number and their value. Moses, we are told, "had an eye to the recompense of reward;" and our Lord himself, "for the joy that was set before him," endured the cross. Let us not then attempt a better method than God has sanctioned; and in our intercourse with the young, let us not only deter them from the commission of evil by the fear of disfavour or the rod, but let us also incite them to virtue, by the hope of approbation and of a future reward.

3. In our enquiry into the practical working of the moral sense, we found, not only that there were motives of action employed for encouraging the pupil to virtue, and for deterring him from vice; but we found also, that these motives referred chiefly to God, to a future judgment, and to eternity. In our attempts to imitate Nature in this particular feature of her dealing with the moral sense, we begin more distinctly to perceive the high value of Religious Instruction to the young, and are led directly to the conclusion, that the motives to be employed with children for encouraging and rewarding good conduct, must be those chiefly of a spiritual kind, referring to [Pg 267] God, and to his favour or disapprobation, rather than to the rod, or to any secular reward. The importance of imitating Nature in this matter, for giving a high tone both to the sentiments and to the morals of the young, is very great. It is now generally admitted, that secular, and especially corporal punishments, are never required, except in connection with a very low and degraded state of the moral sentiments; but it is equally correct with respect to secular rewards for moral actions. They may both of them at times be necessary, but in that case they are necessary evils; and, as a class of motives, they should never be the rule, but invariably the exception.—We must not, however, be misunderstood. We are no more for abandoning *secular rewards*, than we are for giving up corporal punishments. We speak not here of their *abandonment*, but of their *enlightened regulation*;—both of them may be of service. But what we wish to point out as an important feature in moral training is, that they are, or should be, but seldom necessary; and that they ought never to be resorted to except when they really are so. The differences observable in the results arising from *secular*, and those from *moral* motives, are very different, both as regards their power in restraining from vice, and their influence in stimulating to virtue. What, for example, would we think of the moral condition of a child, or of the virtue of his actions, if he had to be hired by a comfit, or a piece of money, to do every act of kindness which he performed; or if he refused to relieve a sister, or prevent an injury to his companion, unless similarly rewarded? This secular spirit in morals, when thus exposed in its deformity, is obnoxious to every sentiment of virtue, and shews itself to be a mere system of buying and selling. But how very different does the reward appear, and the feeling which it excites, when that reward assumes the moral character, and is found to be the desire of pleasing the parent, and much more when it [Pg 268] seeks the approbation of the Almighty? Every one will see how beneficial and elevating the effects of cherishing the one must be, and how debasing comparatively is the influence of the other. That children are capable of being acted upon by these higher motives, we have already seen; and, when we aim at securing the effects which they are calculated to produce, we are closely imitating Nature in one of her most important operations, and may therefore calculate upon a corresponding degree of success.[25]

4. In the operations of Nature by means of the moral sense, we found, that the impressions made upon the mind in reference to sin or duty, were always most efficient, and most permanent, when the sin or duty was presented to them in the form of example;—that the example increased in efficiency and interest as it was familiar or near;—and that it became still more powerful when it was actually seen or experienced.—From these circumstances we are led to conclude, that the lives and conduct of men, and especially the narrative parts of Scripture, are the proper materials to be employed in the moral training of the young; and the mode of making use of them is also very plainly indicated. The closer we can bring the lesson taught to the child's own experience, or to his own circumstances, the more familiar will it become, and the deeper will be the impression it will make. An instance of infant disinterestedness or heroism, in the parlour or the play-ground, pointed out, and placed in connection with corresponding circumstances in the lives or conduct of those from whom they have previously drawn moral lessons, will render the latter much more familiar and practical, and will create more energetic desires, and stronger feelings of emulation with respect to the former. Or if the conduct of the person of whom the [Pg 269] child hears or reads, can be brought home and applied to his own case and circumstances; or if he can be made to perceive the very same dispositions or conduct exhibited in his companions; or if he can be made to see how he himself can embody in his own conduct those principles and actions which God has approved, and requires to be imitated,—the end of the teacher will be much more certainly gained, than it can be in any other way. This is moral training, conducted by the proper moral means; and to attempt to gain the same end by means which do not either more or less embody these principles, will be found to be much more difficult, and much less efficient. Whoever will consider what is implied by our Lord's address to the Pharisees who erroneously blamed his disciples for unlawfully, as they thought, plucking the ears of corn on the Sabbath, will see this method of reading and applying Scripture distinctly pointed out. "Have ye never read," said our Lord, "what David did, and those who were with him?" This they might have done

frequently; but the mere reading could never answer the purpose for which it was recorded. The moral lesson must be drawn, and it must also be applied to similar cases of mere ceremonial observance.

To apply this principle, then, to the moral training of the young by means of Scripture History, the method is obvious.—The events of the narrative are to be used as examples or warnings to the child in corresponding circumstances. If, for example, the teacher wishes to enforce the duty and the benefits of patience, the history of Job has been provided for the purpose. When that story is taught, and the lessons drawn and applied to the ordinary contingencies of life, such as accident, disease, or distress in a companion; or to circumstances in which the child himself may hereafter be placed; he will be better prepared for his duty in such events, or, in the words of Scripture, he will be "thoroughly furnished" to this good work. If they are to be taught meekness, [Pg 270] the history of Moses, or of other pious men who have been tried and disciplined as he was, will be found best adapted for the purpose. And more especially, the life of our Lord, in which all the virtues concentrate, has been given "as our example, that we may follow his steps," and which ought especially to be employed in training the young "to love and to good works." The reason why example is preferable to precept in teaching children, will be obvious, when we consider the nature of the principle of grouping, as exercised by the young, and the difficulty they experience in remembering abstract or didactic subjects. When a child receives instruction by a story, the imagination is enlisted in the exercise, the grouping of the persons and circumstances assists the memory, and the moral and practical lessons which they have drawn from the narrative, are associated with it, and remain ready at the command of the will whenever they are required.—It was for this reason among others, that our Lord taught so frequently by parables; and, in doing so, has not only set the parent and teacher an important example, but has, in his teaching, illustrated a principle in our nature which he himself had long before implanted for this very purpose.

5. In our investigations into the working of the moral sense, we found, that there was a marked difference between the decisions of conscience when judging of actions done by *ourselves*, and those which were performed by *others*. As long as the child is innocent of any particular vice, he can judge impartially of its nature and demerit; but when the temptation to commit it has really begun to darken his mind, and more particularly when he has at last fallen before it, all the selfish principles of his nature are employed to deceive his better judgment, and to drown or overbear the voice of conscience within him. From this we learn the importance of preparing the [Pg 271] mind *beforehand*, for encountering those temptations to which the pupil will most likely be exposed; not only by teaching him to draw the proper lessons from corresponding subjects, but by making him apply these lessons to his own case and affairs. The teacher is to suppose circumstances, in which he, his parents, and companions, are most likely to be placed, and in which the lessons drawn from the narrative will be required to weaken or to prevent the influences of temptation. As, for example, it might be asked, "If you had accidentally broken a pane of glass, and your parents asked you who did it, what should you do?" There would in this case, while it was only supposed, be no temptation to stifle conscience, or to bend to the influences of selfishness or fear, and the child would accordingly answer readily, that he ought to confess his fault, and tell that he himself had done it. When again asked, "From what do you get that lesson?" he will most probably reply, "From Jacob telling a lie to his parent;—from Ananias and Sapphira telling a lie;—from the command, 'Lie not one to another,' and 'Confess your faults one to another,'" &c. By this means the child is forewarned;—he is prepared and fortified against the sin, if the temptation should occur; but which would not have been the case without this or some similar exercise.

6. We have also seen, in our investigations into the working of the moral sense, the deplorable effects of stifling conscience, and of the child's being permitted to repeat his transgressions; while, upon the same principle, the most beneficial consequences result from the child's frequently practising self-denial, self-controul, and acts of benevolence. In the one case, sin and vice lose much of their deformity, and gain greatly in strength; while, in the other, every act of virtue makes vice appear more hideous, and excites to a more decided advance in the paths of [Pg 272] rectitude. From these circumstances we are led to conclude, that every act of sin in the pupil ought to be carefully guarded against by the parent or teacher, and, if possible, prevented; while every exertion ought to be made to induce to the performance of good and kind actions, however humble or unimportant these actions in themselves may be. If God does "not despise the day of small things," neither should we; and one act of kindness by a child, however trifling, will most assuredly prepare the way for another. This circumstance also shews the impropriety of attempting to magnify faults, when perhaps no fault was designed; and the evil consequences, as well as the injustice, of refraining to commend a child, when commendation is due. The timorous fear, in many conscientious parents, of making children *vain*, is the common excuse for this unnatural conduct. Such persons seem to confound things *vain* with things *valuable*, though they are perfectly opposed to each other. Approbation for any definite quality, excites the individual to excel in *that* quality, whether it be worthless or otherwise. But virtuous deeds are not worthless; and by commending, as our Lord repeatedly did, those who have done well, they, by that principle of our nature of which we are here speaking, are strongly excited to do better. To feed vanity, is to commend vanities; and they who prize and commend beauty, or fashion, or dress, or frivolous accomplishments, may be guilty of this folly; but not the parent or the person who commends in a child those things which are really commendable, and after which it is his greatest glory to aspire.

7. We have already taken notice of Nature's mode of employing motives for the prevention of evil, and for the encouragement of the child in virtue, and how this is to be imitated in the

education of the young; but we have left for this last section, and for separate consideration, the greatest and most powerful motive of all. This is a view of the inherent sinfulness and danger of [Pg 273] sin, and the means appointed by God for man's redemption from it. All other motives to restrain men from sin, and to induce them to follow holiness, when compared with an enlightened view of this one, sink into insignificance. God's hatred of sin, and his holy abhorrence of it in every form, when contemplated in the abstract, may have a response from the head of him who compares it with his own detestation of meanness, and fraud, and profligacy; but when this hatred of vice in the Almighty is viewed in connection with gospel truth, and is contemplated in its effects upon One to whom it was only imputed, it begins to wear a very different complexion; and, as a motive to beware of that which God is determined to punish, and which he would not pass over even in his own Son, it leaves all other motives at an immeasurable distance. The same thing may be said of God's goodness and mercy in the gospel, as a motive for us to love him, and to glory in denying ourselves to serve him. The extent of the danger from which he has saved us, the amount and the permanence of the glory which he has procured for us, and the price that was paid for both, will powerfully "constrain" spiritual minds, to "live no longer to themselves, but to him who hath died for them."

But the question which will be asked here is, "Are children capable of all this?"—We unhesitatingly answer, from long experience, that they are. Whoever doubts the fact has only to try. Can a child not understand that a distinction ought to be made between the person in a family who endeavours to make all happy, and another whose constant aim is to make them all miserable?—Can he not understand, that the parent who refuses to punish a wicked child, is in effect bribing others to join him in his wickedness?—Can he not understand that a debt due by one, may be paid by another?—and that a simple reliance on the word of his benefactor, followed by submission to his will, may be all that is required to secure his discharge?—No one will say [Pg 274] that a child is incapable of understanding these simple truths; and if he can comprehend *them*, he can be made to understand and appreciate the leading truths of the gospel. The teacher has only himself clearly to perceive them; and then, divesting the truths of those unnecessary technicalities which are sometimes, it is feared, used very improperly and unnecessarily, he ought to convey them to the child, either orally, or by some simple catechism suited for the purpose. Wherever this is done in effect, there education will prosper; and when it shall become general among the young, it will be found to be "as life from the dead."

**FOOTNOTES:**

[23] See pages 111 to 129

[24] Note X.

[25] Note Y.

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## CHAP. X.

### *On the Application of our Knowledge to the Common Affairs of Life.*

There is another point connected with the practical use of our knowledge, which deserves a separate and careful consideration. It is the method of applying our knowledge, or rather the lessons derived from our knowledge, to the common and daily affairs of life. In this exercise both old and young are equally concerned;—but it is evident that youth is the proper time for training to its practice.

To acquire this valuable art, the pupils in every seminary ought to be regularly and frequently exercised in the application of their lessons;—first, when they have been drawn from a particular subject, which has occupied their attention for the day; and afterwards generally, from any part of their previous knowledge. To illustrate what we mean by this application of our knowledge, let us suppose a person placed in difficult circumstances, and that he is desirous of knowing the path of duty, and the particular line of conduct which he should pursue. If he is to trust to himself for [Pg 275] the information required, it is evident that he must either fall back upon his previous knowledge, and the instructions he has already received; or he must go forward upon a mere conjecture, or on chance, which is always dangerous. All knowledge is given expressly for such cases, and especially Scripture knowledge; the great design of which is, "that the man of God may be thoroughly furnished to good works." But if the person has not been trained to make use of his knowledge in this way and for this purpose, he will be nearly as much at a loss as if his knowledge had never been received. Hence the great importance of training the young early and constantly to draw upon their knowledge for direction and guidance in every variety of situation in which the parent or teacher can suppose them to be placed in future life. By this means they will be prepared for encountering temptation, which is often more than the half of the battle;—

they will form the habit of acting by rule, instead of being carried forward by fashion, by prejudice, or by chance;—and they will soon acquire a manly confidence, in deciding and acting, both as to the matter and the manner, of performing all that they are called upon to do, in every juncture, and whether the duty be important in the ordinary sense of that term or otherwise.

For this special mode of applying knowledge, we have not only the indications plainly given in Nature, which we have endeavoured to illustrate, but we have also Scripture precept, and Scripture example. Leaving the numerous instances in the Old Testament, we shall confine ourselves to a few given by our Lord himself, and his apostles. For example, he prepared his disciples for the temptations which the love of worldly goods would throw in the way of their escape from the destruction of Jerusalem, by enjoining them to "Remember Lot's wife." Now let [Pg 276] us observe how a teacher, in communicating the history of Lot's wife for the first time, would have prepared these disciples for such a difficulty in the same way. When they had read, that while fleeing for her life, the love of her worldly goods made her sinfully look back, so that she was turned into a pillar of salt; the obvious lesson drawn from this would be, that "we ought to be on our guard against worldly mindedness;"—and the *application* of that lesson to the coming circumstances would have been something like this. "When you are commanded to flee from Jerusalem for your lives, and remember that your worldly goods are left behind, what should you do?"—"We should not turn back for them." "From what do you get that lesson?"—"From the conduct and fate of Lot's wife."

In a similar way, the apostle James prepared Christians for humble resignation and patient endurance under coming trials, by calling to their remembrance "the patience of Job." He stated the trials to which they were to be exposed, and then he directed their attention to the Scripture example which was to regulate them in their endurance of them. Now it is obvious that a teacher, in communicating the history of Job to the young, should follow this example, and should make the same use of it that the apostle did, not only by drawing the lesson, that he "ought to be patient," but in *applying* that lesson to temptations to which the child is likely to be exposed, as James did to the circumstances in which he knew Christians were to be placed. As for example, when the child had drawn the lesson, that "we should be patient under suffering," the teacher might apply it in a great variety of ways, each of which would be a delightful exercise of mind to the child,—would impress the lesson and its source more firmly upon the memory,—and would prepare him for the circumstances in which the lesson might be required. Were the teacher accordingly to ask, "If you were confined by long continued sickness;—or if you were suffering [Pg 277] under great pain;—or if you were oppressed by the cruelty of others, and could not help yourself;—or, if you were grieved by being separated from your friends,—what would be your duty?" The answer to each would be, "We ought to be patient."—"From what do you get that lesson?"—"From the conduct of Job, who was patient under his sufferings."

The apostle Paul follows a similar plan, in applying the practical lessons drawn from the conduct of the Israelites in the wilderness, for fortifying the Corinthians against temptations to which they were likely to be exposed,[26] and tells them that this is the use to be made of Old Testament history. These lives are "ensamples," and are "written for our admonition upon whom the ends of the world are come."—In like manner he forewarned the Hebrews against discontent and covetousness,[27] by drawing a *general* lesson from a *special* promise made to Joshua; and then exhorts every Christian to apply it to himself personally, by employing the language which he puts into their mouths, "The Lord is my helper, and I will not fear what man can do unto me."

In the same way, when our Lord repeatedly says, "Have ye not read?" and, "Thus it is written," he gives us obvious indications of the importance of the duty of thus preparing for temptation, by the application of our lessons from Scripture. They are each and all of them examples of practical lessons derived from knowledge formerly acquired, and now employed in the way of application, to connect that knowledge with corresponding circumstances as they occur in ordinary life. The lesson, it will be observed, and as we formerly explained, is always made the connecting link which unites the two; and without which there is no such thing as the bringing of knowledge and its use together, when that knowledge is required. In other words, without the lesson, knowledge [Pg 278] is *useless*; and, without the application of the lesson, knowledge is *never used*. Both therefore are necessary, and both should be rendered familiar to the young. It is only necessary here to observe, that in teaching the children to *draw* the lessons, the teacher proceeds forwards from the knowledge communicated, and, by deducing the lesson, prepares the child for the events in life when they shall be necessary;—but in *applying* the lessons, he proceeds backwards, from the events, through the lesson to the knowledge from which it is derived. We have a beautiful example of this in the recorded temptations of our Lord. He was tempted to turn stones into bread; here was the event which required a knowledge of the corresponding duty; and he immediately applied the lesson that "we should not distrust God," and through this lesson, though not expressed, he went directly back to the source from which it was drawn, by saying, "Thus it is written, Man shall not live by bread alone, but by every word of God." When in like manner he was tempted to throw himself from the temple, he immediately, through the lesson "that we should not unnecessarily presume on the goodness of God," went to the passage of Scripture from which it was drawn;—and, in the same way, when tempted to worship Satan, there was precisely the same process;—a lesson, derived from previous knowledge and applicable to the circumstances, used as a uniting link to make the duty and the Scripture exactly to correspond.

Of doing all this which we have described above; even children are capable. This has been again and again proved by repeated experiments, and now by extensive experience in many schools. The difficulties of introducing it, even for the first time in any seminary, do not lie with the children, who in every case have shewn themselves quite adequate to the exercise; and

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wherever it has been followed up with corresponding energy, they have been raised much higher in the grade of intelligence and mental capacity by its means. This will be evident from the following, taken from among many examples.

The criminals in Edinburgh Jail during the short time they were under instruction, acquired considerable facility in this valuable art. The report states, that "some of them were afterwards exercised on the application of the lessons. This part consists in supposing certain circumstances and temptations, to which they may be exposed in ordinary life, and then leaving them, by a very profitable, and usually a very pleasant operation of their own minds, in reference to these, to call up to their recollection, and to hold in review, the whole accumulated range of their previous knowledge. Among the various classes of things thus brought in order before the eye of the mind, they are easily taught to discriminate all those precepts and examples which are analogous to the cases supposed, from which again they very readily select appropriate lessons to *guide them in these emergencies*; thus linking the lessons to the circumstances, which is done in the previous exercise of deducing them; and then the circumstances to the lessons; and in this manner, establishing a double tie between the understanding and the conscience.

"For example, a woman from the Lock-up House, being asked how she ought to conduct herself when the term of her confinement was expired? answered, That she ought not to return to her sinful courses, or wicked companions, lest a worse fate should befal her. When again interrogated where she got this lesson, she immediately referred to the case of Lot, who, being once rescued from captivity by Abraham, returned again to wicked Sodom, where he soon lost all his property, and escaped only with his life. Another being asked what she should do, when involved in a quarrel with troublesome companions? replied, That she should endeavour to be at peace, even though she should lose a little by it; and produced as her authority the conduct of [Pg 280] Abraham, who when Lot's herdsmen and his could not agree, gave Lot his choice of the country, in order to secure peace."

The children in Aberdeen also found no difficulty in perceiving the use, and in applying the lessons to their common affairs. The report of that Experiment states, that "the most important part of the exercise,—that which shewed more particularly the great value of this System, and with which the Meeting were especially struck,—was the appropriate application of the lessons from Scripture, which they had previously drawn. They were desired to suppose themselves placed in a great variety of situations, and were asked how they ought to conduct themselves in each of these. A few examples may be given, though it is quite impossible to do justice to the subject. A boy, for instance, was asked, 'If your parents should become infirm and poor, how ought you to act towards them?' 'I ought,' replied the boy, 'to work, and help them.' And being asked, 'Whence he drew that lesson?' he referred to the conduct of Ruth, who supported Naomi and herself, by gleaning in the fields.—A girl was asked, 'If your mother were busy, and had more to do in the family than she could easily accomplish, what ought you to do?' Her answer was, 'I ought to give her assistance;' and she referred to the conduct of Saul, in assisting his father to recover the asses which were lost; and to that of David, in feeding his father's sheep when his brothers were at the wars.—A little boy was asked, 'If your parents were too indulgent, and seemed to give you all your own will, what ought you to do?' 'I ought not to take it,' replied the boy very readily; and added, that it was taking his own will that caused the ruin of the prodigal son. Another boy being asked, 'If you should become rich, what would be your duty to the poor?' [Pg 281] answered, 'I ought to be good to the poor; but it would be better to give them work than to give them money; for Boaz did not give Ruth grain, but bade his shearers let some fall, that she might get it by her own industry.'"

In the Experiment in London, a child was asked, "When you live with brothers and sisters who are wicked, what should you do?" and answered, "I should not join with them in their sins." And when asked where she got that lesson, answered, "From Joseph, who would not join with his brothers in their sin."—Another was asked, "When you see others going heedlessly on in the commission of sin, what should you do?" and answered, "I should warn them of their danger;" and referred to Noah, who warned the wicked while building the ark.—Again, "When people about you are given to quarrel, what should you do?" We should endeavour to make peace; and referred to Abram endeavouring to remain at peace with Lot's herdsmen.—"When you have grown up to be men and women, what should you do?" "We should go to a trade, and be industrious;" and referred to Cain and Abel following their different employments.—"When two situations occur, one where you will get more money, but where the people are wicked and ungodly; and the other, where you will get less money, but have better company, which should you choose?" "The good company, though with less money;" and referred to Lot's desire for riches taking him to live in wicked Sodom, where he lost all that he had.—"When your parents get old, and are unable to support themselves, what should you do?" "We should work for them;" and referred to Ruth gleaning for the support of her old mother-in-law; and another referred to Joseph bringing his father to nourish him in Goshen.—"When your parents or masters give you any important work or duty to perform, what should you do?" "We should pray to God for success, and for his direction and help in performing it;" and referred to Abraham's servant praying at the [Pg 282] well.—"When we find people wishing to take advantage of us and cheat us, what should we do?" "Leave them;" and referred to Jacob with his family leaving Laban.—"Were any one to tempt you to lie or commit a sin, what should you do?" "We ought not to be tempted;" and referred to Abraham making Sarah tell a lie in Egypt.—"How should you behave to strangers?" "We should be kind to them;" and referred to Lot lodging the angels.—"Were a master or mistress to have the choice of two servants, one clever, but ungodly, and the other not so clever, but pious, which one should be chosen?" "The pious servant;" and referred to Potiphar, whom God blessed and prospered for Joseph's sake.—"When any one has injured us, what should we do?" "Forgive

them;" and referred to Joseph forgiving and nourishing his brethren.—"When you have once escaped the snares and designs of bad company, what should you do?" "We should never go back again;" and referred to Lot going back again to live in Sodom from which he at last escaped only with his life.

In the account given of the Newry Experiment, the boys were equally ready in applying for their own benefit the lessons they had drawn from their knowledge of anatomy and physiology. The account says, that "the most interesting, as well as the most edifying part of the examination, and which exhibited the great value of this method of teaching the sciences to the young, was the *application* of these lessons to the circumstances of ordinary life. Circumstances were supposed, in which they or others might be placed, and they were required to apply the lessons they had drawn for their direction, and for regulating their conduct in every such case. This they did with great sagacity, and evident delight, and in a manner which convinced the audience that the few hours during which they had been employed in making these acquisitions, instead of being [Pg 283] irksome and laborious, as education is too often considered by the young, were obviously among the happiest and the shortest they had ever spent in almost any employment,—their play not excepted. We shall give a specimen of these, and the answers given, as nearly as can be recollected.

"The case of walking in a frosty day was supposed, and they were asked what, in that case, ought to be done? The answer was, That we should take care not to fall. Why? Because the bones are easily broken in frosty weather.—When heated and feverish in a close room, what should be done? Let in fresh air; because it is the want of oxygen in the air we breathe that causes such a feeling, but which the admission of fresh air supplies.—When troubled with listlessness, and impeded circulation, what should we do? Take exercise; because the contraction of the muscles by walking, working, or otherwise, forces the blood to the heart, and through the lungs, by which health and vigour is promoted.—Where should we take exercise? In the country, or in the open air; because there the air is purer than in a house or a town, where fires, smoke, frequent breathing, and other things, render the atmosphere unwholesome.—Would breathing rapidly, without exercise, not nourish the blood equally well? No; because although more air be drawn into the lungs, there would be no more blood to combine with its oxygen.—What should be done, when candles in a crowded church burn dim, although they do not need snuffing? Let in fresh air; because the air is then unwholesome for want of oxygen; which, carried to a great extent, would cause fainting in the people, and would extinguish the candles themselves.—When a fire is like to go out, what should be done? Blow it up with bellows. Why not by the mouth? Because the air blown from the lungs has lost great part of its oxygen, by which alone the fire burns. Why then [Pg 284] does a fire blown with the mouth burn at all? Because part of the oxygen remains, said one boy; and another added, "and because part of the surrounding air is blown in along with it."

At the second meeting with these boys, occasioned by the unexpected circumstances formerly alluded to, they were summarily, and without previous notice, taken from their school to another public meeting, without knowing for what purpose they were brought, and had to undergo a still more searching examination on what they had been previously taught. Here again they shewed their dexterity in making use of their lessons, by the application of them, and proved that they had been doing so to themselves in the intercourse which they had had with their relations at home. The account goes on to say, that "they were then more fully and searchingly examined than at first; and there being more time, they were much longer under the exercise. It was then found, that the information formerly communicated was not only remembered, but that the several truths were much more familiar, in themselves and in their connection with each other, than they had been at the former meeting. This had evidently arisen from their own frequent meditations upon them since that time, and their application of the several lessons, either with one another, their parents, or themselves. The medical gentlemen were again present, and professed themselves equally pleased. The lessons, *with considerable additions*, were also given, and the applications especially were greatly extended. In these last they appeared to be perfectly at home; and relevant circumstances might have been multiplied for double the time, without their having any difficulty in applying the lessons, and giving a reason for their application."

But the most satisfactory of all the experiments on this point, as implying the possession of a well-cultivated mind, holding at command an extensive field of useful knowledge, was the one in [Pg 285] Leith, although from accident, or inadvertence on the part of the reporter, a large portion of it has been lost to the public. The following fragment, however, will be sufficient to shew its nature and its value. The examinator wished "to ascertain the power which the children possessed of applying the passage to their own conduct; and for this purpose, he proposed several circumstances in which they might be placed, and asked them to show how this portion of Scripture directed them to act.—Supposing, said he, that your father and mother were to neglect to take you to church next Sunday, would that be wrong?—Yes.—From what do you get that lesson? And when he was twelve years old, they went up to Jerusalem after the custom of the feast.—Is it right that children should go to church with their parents? Yes.—Why? Because Jesus went with his parents.—Would it be right for you to go out of church during the time of the service? No.—Why? Joseph and Mary remained till the service was over.

"The next point to be ascertained was, whether the children were able, not only to perceive what passages of Scripture were applicable in particular circumstances, but also to find out what circumstances in life those passages might be applied to. For this purpose, Mr Gall asked, 'Could you tell me any circumstances which may happen, in which you may be called on to remember that Joseph and Mary attended public worship?'—If a friend were to take dinner or tea with us, that should not detain us from attending church.—Idle amusements should not detain us from

church; and nothing should keep us from it but sickness.

"Mr Gall again expressed his unabated satisfaction at the results of the examination, in proving the intellectual acquirements of the children. But so important did the application of the lessons appear to him, that he must trespass still further upon the time of the meeting by a more severe [Pg 286] test of the children's practical training on this particular point. It was a test which he believed to be altogether new to them; but if they should succeed, it will prove still more satisfactorily, that their knowledge of Scripture has made it become, in reality, a light to their feet, and a lamp to their path.

"Mr Gall then produced a little narrative tract, which he read aloud to the children; and after the statement of each moral circumstance detailed in it, he asked the children whether it was right or wrong. When the children answered that it was *right*, he required them to prove that it was so, by some statement in the word of God, because the Bible should to them, and to every Christian, be the *only* standard of what is right and wrong; and so, in the same manner, when they said that it was *wrong*, he required them also to prove it from Scripture.

"As soon as the children perceived what was wanted, passages of Scripture, both of precept and example, were brought forward with as much readiness and discrimination as before. The only exception, was one or two quotations from the Shorter Catechism in proof of their positions, which were of course rejected, as deficient of the required authority."

The concluding remarks by the Right Honourable and Reverend reporters of the Experiment in Edinburgh, may with propriety be here given, as it is applicable, not only to prison discipline, but to education in general. "The result of this important experiment," they say, "was, in every point, satisfactory. Not only had much religious knowledge been acquired by the pupils, and that of the most substantial, and certainly the least evanescent kind; but it appeared to have been acquired with ease, and even with satisfaction—a circumstance of material importance in every case, but especially in that of adult prisoners. But the most uncommon and important feature of it was, the readiness which they, in this short period, had acquired of deducing *Practical Lessons* from what [Pg 287] they had read or heard, for the regulation of their conduct. Every leading circumstance in Scripture, by this peculiar feature of the System, was made to reflect its light on the various common occurrences of ordinary life, by which the pupils themselves were enabled to judge of the real nature of each particular act, and to adopt, or to shun it, as the conscience thus enlightened should dictate. The acting and re-acting, indeed, of every branch of the System, upon each other, interweaves so thoroughly the lessons of Scripture with the feelings and thoughts of their minds, and associates them so closely with the common circumstances of life, that it is almost impossible that either the portions of the Bible which they have thus learned, or the practical lessons thus drawn from them, should, at any future period, escape from their remembrance. The evolutions of their future life, will disclose circumstances which they are prepared to meet, by having lessons laid up in store, adapted to such occurrences; and especially, when the mental habit is formed of applying Scripture in this manner, there is scarcely an event which can happen, but against its tempting influence they will be fortified by the armour of divine truth.—Their compliance with temptation, should that take place, will not be done without a compunction of conscience, arising from some pointed and warning example that comes in all its urgency before their minds;—and they will, when seduced from rectitude, have a light within them, and a clue of divine truth, to guide them out of the dark and mazy labyrinth of error and crime, into the path of duty and virtue. It is God alone that can bless such instruction, and render it savingly efficacious; but surely the inference is fair, that this System furnishes us with an instrument, which, if skilfully employed, will effect all that man can do for his erring brother or sister."

**FOOTNOTES:**

[26] 1 Cor. x. 1-11.

[27] Heb. xiii. 5, 6

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## CHAP. XI.

### *On the Imitation of Nature, in training her Pupils fluently to communicate their Knowledge.*

There is a fourth, or supplementary process in Nature's educational course, the successful imitation of which promises to be of great general benefit, as soon as it shall be universally adopted in our elementary schools. It is, as it were, the door-way of intellect,—the break in the cloud, through which the sun-light of concocted knowledge is to find its way, to enlighten and

cheer the general community.—We refer to that acquirement, by which persons are enabled, without distraction of mind, internally to prepare and arrange their ideas, at the moment they are verbally communicating them to others.

When this process is analysed, we find, as explained in a former chapter, that it consists simply in an ability to think, and to arrange our thoughts at the time we are speaking;—to exercise the mind on one set of ideas, at the moment we are giving expression to another. Simple as this at first sight may appear, we have seen that it is but very gradually arrived at;—that many persons, otherwise possessing great abilities, never can command it;—that it is altogether an acquisition depending upon the use of proper means;—but that, at the same time, any person whatever, by submitting to the appropriate discipline, may attain almost any degree of perfection in its exercise. The object required by the teacher, therefore, is a series of exercises, by means of which his pupils will be trained to think and to speak at the same moment; to have their minds busily occupied with some object or idea, while their powers of speech are engaged in giving utterance to something else. For the purpose of suggesting such an exercise, we shall again attend shortly to the exhibition of the process, as we find it under the superintendence of Nature. [Pg 289]

An infant, as we formerly explained, can for a long period utter only one or two words at a time,—not because it is unacquainted with more, but because it has not yet acquired the power of thinking the second word, while it is giving utterance to the first. It has to attain, by steady practice, and by slow degrees, the ability of commanding the thoughts, while uttering two, three, or more words consecutively, without a pause. A child also, whose mind is engaged with its toys, cannot for some time, during its early mental advances, attend to a speaker; much less can it think of, and arrange an answer to a question, while it continues its play. It has to stop, and think; it then gives the information required; and after this it will perhaps resume its play, but not sooner. When a child can speak and continue its amusements, it is an evidence of considerable mental power; and as Nature makes use of its play, for the purpose of increasing this ability, the teacher, and especially the parents, ought to excite and encourage every attempt at conversation while the pupil is so employed. But our object at present is to arrive at one or more regular exercises that shall embody the principle; exercises which may at all times be at the command, and under the controul of the teacher and parent, and which may form part of the daily useful arrangements of the school or the family. The following are a few, among many, which we shall briefly notice, before introducing one which promises to be still more beneficial, and more generally applicable to the economy of literary pursuits, and the arrangements of the academy.

One of the exercises which assists in attaining the end here in view, we have already alluded to, as being successfully employed by Nature for the purpose,—that is, the child's play. Any amusement which requires thought or attention, is well calculated to answer this purpose,—and [Pg 290] if the child can be induced and trained to speak and play at the same time, his thinking powers being occupied by the external use of his toys, the end of the teacher will in so far be gained. Questions put to a child at that time, and answers given by him while he continues to exercise his mind upon his amusements, will prepare the way, and greatly assist in giving him the power of exercising it upon ideas, without the help of these external and tangible objects. The principle in both cases is the same, although in the one it is not carried out to the same extent as it is in the other. And here we cannot help remarking, how extensive and important a field the working of this principle opens up to the ingenious toy-man. If a game, or games, can be invented, where the child must have his attention occupied with one object, while he is obliged to answer questions, or to make observations, or to detail facts, or in any other way to employ his speaking powers extemporaneously, (not repeating words by rote,) the person who does so will greatly edify the young, and benefit the public.

Another method by which the principle may be called into exercise, is to tell a short story, or simple anecdote, and then to require the child to rehearse it again. In doing this, the mind of the child is employed in communing with the memory, while he is engaged in detailing to the teacher or monitor, the special circumstances in their order. Upon the principles of individuation and grouping, too, (the two most important principles, be it observed, which Nature employs with young children,) we can perceive, that it will be much easier for the child, and at least equally powerful in producing the effect, if the teacher or parent shall confine himself to one or two stories or anecdotes at a time, till, by repeated attempts, the child can in its own words, and in its own way, readily and fluently detail the whole of the circumstances to the parent or teacher, [Pg 291] whenever required.

A similar mode of accomplishing the same object, when the child is able to read, is, to require him at home to peruse a story of some length, and to rehearse what he can remember of it next day. This ought, however, in every case to be a narrative, or anecdote, consisting of groupings which the child can, on reading, picture on his mind. If this be neglected, there is danger of the child's being harassed and burdened, without any corresponding benefit being produced. It is here also worthy of remark, that Dr Mayo's "Lessons on Objects" may be employed for this purpose with considerable effect. If a list of qualities, such as colour, consistence, texture, &c. be put into the child's hand, and he be required to elucidate and rehearse those relating to one particular object, either placed before him, or, what is better, one with which he is acquainted, but which at the time he does not see, the eye and the mind will be engaged with his paper, and in recollecting the particular qualities of the object, at the same time that he is employed in communicating his recollections.

Another method for producing the same end, consists in the parent or teacher repeating a sentence to the child, and requiring him to remember it, and to spell the several words in their order. Here the child has to remember the whole sentence, to observe the order of the several

words, to chuse them one after another as he advances, and to remember and rehearse the letters of which each is composed. The mental exercise here is exceedingly useful, besides the advantages of training children to correct spelling. At the commencement of this exercise with a child, the sentence must be short, and he may be permitted to repeat each word after he has spelled it, which will help him to remember the word that follows;—but as he advances, he may be made to spell the whole without pronouncing the words; and the length of the sentence may [Pg 292] be made to correspond with his ability. Great care however should be taken by the teacher that this exercise be correctly performed.

Many other methods for exercising the child's mind and oral powers at the same moment, will be suggested by the ingenuity of teachers, and by experience; and wherever a teacher hits upon one which he finds efficient, and which works well with his children, it is to be hoped that he will not deprive others of its benefit. Such communications in education, like mercy, are twice blessed. But the exercise which, for its simplicity and power, as well as for the extent of its application to the business and arrangements of the school, appears to answer the purpose best, and which embodies most extensively the stipulations required for the successful imitation of Nature in this part of her process, is that which has been termed the "Paraphrastic Exercise." The exercise here alluded to has this important recommendation in its practical working, that while it can be employed with the child who can read no more than a sentence, it may be so modified and extended, as to exercise the mental and oral powers of the best and cleverest of the scholars to their full extent. It consists in making a child read a sentence or passage aloud; and, while he is doing so, in requiring him at the same moment, to be actively employed in detecting and throwing out certain specified words in the passage, and in selecting, arranging, and substituting others in their place; the child still keeping to the precise meaning of the author, and studying and practising, as far as possible, simplicity, brevity, elegance, and grammatical accuracy. It may be asked, "What child will ever be able to do this?" We answer with confidence, that every sane pupil, by using the proper means, may attain it. This is no hypothesis, but a fact, of which the experiment in Leith gives good collateral proof, and of which long and uniform [Pg 293] experience has afforded direct and ample evidence. Any teacher, or parent indeed, may by a single experiment upon the very dullest of his pupils who can read, be satisfied on the point. Such a child, by leaving out and paraphrasing first one word in a sentence, then two, three, or more, as he acquires ability, will derive all the advantages above described; and, by advancing in the exercise, he may have his talents taxed during the whole progress of his education to the full extent of their powers. It is in this that one great recommendation lies to this exercise,—it being adapted to every grade of intellect, from the child who can only paraphrase a single word at a time, to the student who, while glancing his eye over the passage, can give the scope of the whole in a perfectly new form, and in a language and style entirely his own. Of the nature and versatility of this exercise we shall give a single example.

Let us for this purpose suppose that a child sees in the first answer of the First Initiatory Catechism the words, "God at first created all things to shew his greatness," and that the teacher wishes to exercise his mind in the way, and upon the principle of which we are here speaking, by making him paraphrase it. He begins by ascertaining that the child knows the exact meaning of one or more of the several terms used in the sentence, and can give the meaning in other words. As for example, he should be able to explain that the first word means, "the Almighty;"—that the words at "first," here signifies, at "the beginning of time;"—that "created" means, "brought into existence;"—that the term "all things," as here used, indicates, "all the worlds in Nature, with their inhabitants;"—that the phrase to "shew," means to "exhibit to his rational creatures;"—and that his "greatness," at the close implies, his "infinite majesty and perfections."

Now it must be obvious, that any one of these explanations may be made familiar to the dullest child that can read; and if *this* can be done, the principle may immediately be brought into [Pg 294] exercise. For example, when the child knows that the first word means "the Almighty," and that "first" is another way of expressing "the beginning of time," he is required to read the whole sentence, and in doing so, to throw out these two words, and to substitute their meanings. He will then at once read the sentence thus: "[The Almighty,] at [the beginning of time,] created all things to shew his greatness." The same thing may be done with any one or more of the others; and if the child at first feels any difficulty with two, the teacher has only, upon the principle of individuation, to make one of them familiar, before he be required to attend to a second; and to have two rendered easy before he goes forward to the third. Each explanation can be mastered in its turn, and may then be employed in forming the paraphrase; by which means the child's mind is called to the performance of double duty,—reading from his book,—throwing out the required words,—remembering their explanations,—inserting them regularly and grammatically,—and perhaps transposing, and re-constructing the whole sentence,—at the moment that he is giving utterance to that which the mind had previously arranged.

The same thing may be done with a sentence from any book, although not so systematically prepared for the purpose as the Initiatory Catechisms have been. The explanations of any of the words which may be pointed out, or under-scored by the teacher, can easily be mastered in the usual way by any of the children capable of reading them; and if he shall be gradually and regularly trained to do this frequently, his command of words, in expressing his *own* ideas, and his ability to use them correctly, will very soon become extensive and fluent. The importance of this to the young is much more valuable and necessary than is generally supposed. Nature evidently intends that childhood and youth should be the seed-time of language; and the exercise [Pg 295] here recommended, when persevered in, is well calculated to produce an abundant harvest of words, suited for all kinds of oral communications.—Its importance in this respect, as well as its efficiency in fulfilling all the stipulations necessary for imitating Nature in the exercise of the

principle which we are here illustrating, will be obvious to any reader by a very simple experiment.

For this purpose the sentence which we have already employed may, for the sake of illustration, be represented in the following form.—"[God] at [first] [created] all [things] to [shew] his [greatness.]"—Here each of the words, which we formerly supposed to be explained by the child, is inclosed in brackets. Now if the reader will be at the pains of trying the experiment upon himself, and shall endeavour to observe the various operations of his own mind during it, he will at once perceive the correctness of the above remarks. That he may have the full benefit of this experiment, he has only to fix upon any one—but only one—of the inclosed words in the above sentence, and having ascertained its precise meaning as before given, he must *read* the sentence aloud from the beginning, following the words with his eye in the ordinary way, till he arrives at the word he has fixed on. This he leaves out, and in its stead inserts the explanation, and then goes on to read the remainder of the sentence.—At the first trial he will perhaps be able to detect in his own mind some of the difficulties, which the less matured intellect of the young pupil has to encounter in his early attempts to succeed in the exercise; but he will also see, that it is a difficulty easily overcome when it is presented singly, and when the pupil is permitted to grapple with the paraphrasing of each word by itself. The reader will also be able to trace the operation of the young mind while engaged with the explanations, which differ entirely from the words [Pg 296] which he is at the moment looking upon and reading. He will observe, that when the eye of the child arrives at the word fixed upon, he has to pause in his utterance for a moment, till the mind goes in search of what it requires; in the same way, and upon precisely the same principle, that an infant who has managed to speak one word, has to stop, and go in search of the next, and then to concentrate the powers of its mind upon it, before he can give it expression. But if the reader will repeat the operation to himself upon the *same word*, till he can read its explanation in the sentence without difficulty and without a pause; and then do the same with two, then with three, and so on, till he has completed the whole; he will be able to appreciate in some measure the importance of this exercise in training the young to such a command of language, as will enable them, on all known subjects, to deliver fluently, and in any variety of form, the precise shade of meaning which they wish to express.

This of itself will be a great attainment by the pupil; but it is not all. The reader will also perceive what must be the necessary result of persevering in this exercise, during the time of a child's attendance at school, in training him to that calm self-possession,—that perfect command of the mind and the thoughts,—while engaged in speaking, which the frequent and gradually extended use of this exercise is so well calculated to afford. All the children of a school, without exception, may be exercised by its means, and upon the same paragraph; for while, by the paraphrasing of but one word in a clause, it is within the reach of the humblest intellect; yet, by the changes and transpositions necessary in more difficult passages, either to smooth asperities, or to avoid grammatical errors, it provides an extemporaneous exercise suited to the talents of the highest grade in any seminary.

The collateral advantages also of this exercise, are both valuable and extensive. The operation [Pg 297] of the principle which supposes double duty by the mind, enters into the nature of numerous acts in ordinary life, besides that of thinking and speaking, and which a perfect command of the thoughts in paraphrasing will tend greatly to facilitate.—For example, it will greatly assist the pupil in making observations during conversation, in attending to the weak and strong points of an argument, and in preparing his materials for a reply, while he is all the time hearing and storing up the ideas of a speaker.—It will enable him more extensively, and more deliberately to employ his mind on useful subjects while engaged with his work, even in those cases where a considerable degree of thought is required;—and it will greatly aid him in acquiring the art of "a ready writer," and will be available, both when he himself writes his own thoughts, or when he requires to dictate them to others. Many persons who can express their ideas well enough by speech, find themselves greatly at a loss when they sit down to write them;—and this arises entirely from the want of that command of the mind which is necessary whenever it is called on to do double duty. The person cannot think of that which he wishes to write, and at the same moment guide the hand in writing; in the same way, and for the same reason, that a child cannot answer a question and yet continue his play. By the use of the paraphrastic exercise, however, the pupil will soon be enabled not only to concoct in his own mind what he intends to write, during the time he is writing; but the faculty may, by the same means, be cultivated to such an extent, that he may at last be able to dictate to two clerks at a time, and sometimes perhaps, (as it has been affirmed some have done) even to three.

A similar collateral advantage, which will arise from the persevering use of the paraphrastic exercise, deserves a separate consideration.—It will gradually create a capacity to take written notes of a subject, either in the church, the senate, or the lecture room, during the time that the [Pg 298] speaker is engaged in delivering it. It is in the ability to hear and concoct in the mind one set of ideas, while writing down an entirely different set, that the whole art of accurate "reporting" consists. The writing part of the process is purely mechanical; the perfection of the art consists chiefly in the command which the reporter acquires over the powers of his mind. The person while so employed has to hear and reiterate the ideas of the speaker as he proceeds; these he must remember and arrange, selecting, abridging, condensing, or abandoning, according to the extent of his manual dexterity in writing. But it is worthy of remark, that if the person be able to think,—to exercise his mind,—and to continue to write without stopping while he does so, the *amount* of what he writes is a mere accident, and depends, not upon the state of the mind, but upon the mechanical part of the operation, which is aided by the arts of stenography and abbreviation. This mental capacity is most likely to be acquired by the regular and persevering

use of the paraphrastic exercise. It will train the pupil to that command over his thoughts, which, with a little practice in this particular mode of applying it, will soon enable him, with perfect self-possession, to hear and to keep up with a speaker, while he continues without a pause, to write down as much of what has been said, as his command of the pen will allow. Without this mental ability, he could not while listening write at all; but when it has been sufficiently acquired, there is no limit to his taking down all that is spoken, except what arises from the imperfection of the mechanical part of the process,—his manual dexterity. All these collateral advantages will accrue to the pupils by the use of this exercise; and this latter one will be greatly promoted in a school by a piece of history, an anecdote, or a paragraph of any kind, which none of the pupils know, being read slowly for only a few minutes, while the whole of the pupils who can write are [Pg 299] required to take notes at the time, and to stop and give them in, as soon as the reading is finished.[28]

It is also here worthy of remark,—and it is perhaps another proof of the efficiency of the several exercises before enumerated as imitations of Nature,—that they all, more or less, embody a portion of this principle of double duty performed by the mind. In each of them, when properly conducted, the pupil is compelled to speak, and to think at the same moment. Not a little of their efficiency and value indeed, may be attributed to this circumstance. In the catechetical exercise, for example, it is not difficult to trace its operation. For in the attempt of the child to answer a question previously put to him, the teacher will be at no loss to perceive the mind gradually acquiring an ability to think of the original question and of the ideas contained in the subject from which he has selected his answer, at the very moment he is giving it utterance. And a knowledge of the fact should excite teachers in general, so to employ this exercise as to produce this effect.—The analytical exercise also, in its whole extent, calls into operation the working of this principle, whether employed synthetically or analytically. When children are employed with the analytical exercise proper,—as in tracing a practical lesson backwards to the subject or circumstance from which it has been drawn, and in attaching that circumstance to the story or class of truths to which it belongs; or when, as in the "Analysis of Prayer," a text of Scripture has to be classified according to its nature, among the several parts into which prayer is divided;—in all these cases, there is this same double operation of the mind, searching and comparing one set of ideas, while the pupil is employed in giving expression to others.

The exhibition of the principle will be easily traced, from what took place in the experiment in [Pg 300] London, where the report states, that "the third class were next examined on the nature and practice of prayer. They shewed great skill in comprehending and defining the several component parts of prayer, as invocation, adoration, confession, thanksgiving, petition, &c. They first gave examples of each separately; and then, with great facility, made selections from each division in its order, which they gave consecutively; shewing, that they had acquired, with ease and aptitude, by means of this classification, a most desirable scriptural directory in the important duty of prayer. They then turned several lessons and passages of scripture into prayer; and the Chairman, and several of the gentlemen present, read to them passages from various parts of the Bible, which they readily classified, as taught in the 'Questions on Prayer,' and turned them into adoration, petition, confession, or thanksgiving; according to their nature, and as they appeared best suited for each. Some of the texts were of a mixed, and even of a complicated nature; but in every case, even when they were not previously acquainted with the passages, they divided them into parts, and referred each of these to its proper class, as in the more simple and unique verses."

But a similar working of the same principle takes place when the analytical exercise is employed synthetically, and when the pupil is required to go from the root, forward to the extreme branches of the analysis, as is done when he forms an extemporaneous prayer, from a previous acquaintance with its several divisions and their proper order. In this very necessary and important branch of a child's education, the "Analysis of Prayer" is usually employed, and has, in thousands of instances, been found exceedingly effective. During this exercise, the child has steadily to keep in view the precise form and order of the Analysis, and at the same moment he has to select the matter required under each of the parts from the miscellaneous contents of [Pg 301] his memory, to put them in order, and to give them expression. In doing this there is a variety of mental operations going on at the same moment, during all of which the pupil will soon be enabled continuously to give expression to his own ideas, with as much ease and self-possession as if he were doing nothing more than mechanically repeating words previously committed to memory. This is a valuable attainment; and yet the whole of this complicated operation of attending to the several branches of the analysis, and of selecting, forming, and giving utterance to his confessions, his thanksgivings, and his petitions, with perfect composure and self-possession, is within the reach of every Christian child. It is accomplished by a persevering exercise of the principle which has been illustrated above, and which is exemplified in the paraphrastic exercise. Many adults, it is believed, have been enabled, with ease and comfort, to commence family worship by its means; and numerous classes have been trained to the exercise in a few lessons. We shall here detain the reader by only a single example.

The writer having been requested to meet with the Sunday School Teachers of Greenock and its neighbourhood, about the year 1827 or 1828, paid a visit to that place, and had the proposed meeting in a large hall of the town, where he endeavoured to explain to them, practically, a few of the principles connected with Sunday School Teaching, as more scientifically detailed in the present Treatise. For the purposes of that meeting, three children belonging to one of the Sunday Schools, were for a few hours previously instructed, and prepared to exhibit the working of some of those principles which, it was hoped, would lessen the labour of the Sunday School Teachers, and at the same time increase their influence and their usefulness. These children, (two girls and

a boy,) about the ages of ten or twelve years, were regularly instructed by means of the catechetical exercise, in the doctrines, examples, and duties of Christianity; and among other subjects, they were made acquainted with the "Analysis of Prayer," and exercised by its means, without its being hinted to them, however, what use was intended to be made of it. [Pg 302]

The meeting was a crowded one; where, besides the Sunday School Teachers, and Parents of the children, nearly all the Clergymen of the place were present. When the more ostensible business of the meeting had been concluded, the writer consulted privately with two or three of the clergymen, and asked, whether they, knowing the general sentiments of the persons composing the meeting, would think it improper that one of the three children who had shewn themselves so intelligent, should be called on solemnly to engage in prayer with the audience before dismissing. To this they replied, that there could be no objections to such a thing, provided the children were able;—but of their ability, they very seriously doubted. On this point, however, the writer assured them there was no fear; and if that were the only objection, they would themselves immediately see that it was groundless. The boy accordingly, without his even conjecturing such a thing previously, was, before the meeting was dismissed, publicly called on to engage in prayer. He was for a moment surprised, and hesitated; but almost immediately, on the request being repeated, he shut his eyes, and commenced, with a solemn and faltering voice for one or two sentences; when, recovering from every appearance of trepidation, he proceeded with much propriety and solemnity of manner, with great latitude, and yet perfect regularity and self-possession, through all the departments of adoration, confession, thanksgiving, and petition, in language entirely his own, selecting for himself, and arranging his sentences agreeably to the Analysis, which was evidently his guide from the beginning to the end. This Treatise will, there is [Pg 303] little doubt, be read by some who were that evening present, and who will remember the universal feeling of surprise and delight, at the perfect propriety of expression, the serenity of mind, and the solemnity of manner, which characterised the whole of this uncommon exercise. It did appear to many as a most unaccountable thing; but when the principle is perceived, as explained above, the wonder must at once cease, and we can distinctly see, that by using the proper means, the same ability is within the reach of all who will be at the pains to make the trial.

This same principle is also exercised to a very considerable extent in drawing and applying lessons from a previous announcement. A very little attention to the operations of the mind in that exercise will be sufficient to shew this. Let us suppose, for example, that an announcement is made to a child, from which he is required to draw a practical lesson. This announcement must be distinctly present to his mind, while he is engaged in considering its meaning, its moral character, and its bearing on his own sentiments and conduct;—but more especially, all this, besides the original announcement, has still to be kept in view, while he is engaged in giving the lesson to the teacher in his own language as required. But in the application of the lessons, the principle is still more extensively called into operation. The child is asked, how he should act in certain given circumstances. These circumstances must accordingly be kept steadily before the mind, during the whole of the succeeding mental operation. He has to consider the lesson, or the conduct which he should pursue in these circumstances, and then, by the association of his ideas, he must call up from the whole of his accumulated knowledge, the precepts, the examples, the warnings, and even the implications, which form his authority for deciding on the conduct which he ought to pursue. These again must be kept before the mind, while he is preparing, and giving [Pg 304] in his own language his conclusions to his teacher.

All this was very obvious in the several public experiments, where the drawing of lessons, and the application of them by the pupils, were introduced.—In the case of the adult prisoners in Edinburgh County Jail, it was very observable; and the rolling of the eye, and the unconscious movement of the head, as if deeply engaged in some mental research when an application was required, were peculiarly pleasing and obvious to all the spectators. The reason was, that they had to keep before their mind, the circumstance, or statement involved in the question asked, while they had, at the same time, to review the several portions of their knowledge, chuse out the passage or example which was calculated to direct them in the duty; and then, still keeping these accumulated ideas present before the mind, they had to prepare and give expression to their answers. The same thing had to be done, but to a much greater extent, by the children in Aberdeen, in London, and in Newry. But the most satisfactory evidence of the beneficial working of this principle, in the drawing and applying of lessons, and by this means in giving even to children a command of language, and a power of extemporaneous speech which is but rarely attained even by adults, is to be found in the Seventh Experiment in Leith. The writer feels more at liberty in descanting upon the extraordinary results of that investigation with the children, because he had no share in their previous instruction; the peculiar merits of which belonged entirely to their zealous and pious teacher. He was a plain unlettered man; and yet he has trained hundreds of children in his Sunday school, whose intellectual attainments, for their age and rank in life, the writer has seldom known to be surpassed. There were exhibited by the children, from the beginning of the experiment to the end, an amount of knowledge, a degree of mental culture, [Pg 305] a grasp of mind, and a fluency of expression, which had never before been witnessed in children of a similar class, or of the same age, by any person then present. The pupils were at the time quite unprepared for any extraordinary exhibition;—the subjects were chosen indiscriminately by the clergymen present, and were repeatedly changed;—and what is still more extraordinary, it was found, upon investigation, that the subjects were in general entirely new, or at least they had never been previously used as exercises in the school. The children, however, with all these disadvantages, were perfectly at home in each one of them. There appeared to be no exhausting of their resources; and the ease, and copiousness, and fluency of their language, were remarked

by all present, as extraordinary, and by some as almost incredible. Many who were present, could scarcely believe that the children spoke extemporaneously. All these phenomena were simply the effects of the principle of which we are here speaking, regularly brought into operation, in the weekly acts of drawing and applying their practical lessons. The exhibition of so much mental power possessed by mere children,—and these children collected from the very humblest and rudest classes inhabiting a sea-port town,—appeared to be a circumstance altogether new. The official persons present, and the very Rev. Bishop Russell, who took an active part in the examination, expressed their decided satisfaction at the results of the whole experiment; and the effects of these principles, as illustrated by such children, made the present Lord Murray remark publicly at the close of the meeting, that it was obviously "a valuable discovery, calculated to be extensively useful to society."

**FOOTNOTES:**

[28] Note Z.

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[Pg 306]

# PART IV.

# ON THE SELECTION OF PROPER TRUTHS AND SUBJECTS TO BE TAUGHT IN SCHOOLS AND FAMILIES.

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## CHAP. I.

### *On the General Principles which ought to regulate our choice of Truths and Subjects to be taught to the Young.*

In all cases where our temporal interests are concerned, a proper discrimination in the selection of such exercises and studies as shall best suit our purpose, is considered as not only prudent, but necessary. The neglect of this would, indeed, by men of the world, be esteemed the height of folly. No ship-master thinks of perfecting his apprentices by lectures on agriculture; nor does the farmer train his son and successor to cultivate the land, by enforcing upon him the study of navigation. In a public school, therefore, when all classes of the community are to be taught, the truths and exercises should be selected in such a manner, that they shall, if possible, be equally useful to all; leaving the navigator and the agriculturist, the surgeon and the lawyer, to supplement their *general* education, by the study of those special branches of learning which their several professions require.

But even this is not enough:—Among those subjects and exercises in which all the children in a school may be equally interested, there are many which are neither equally useful, nor equally indispensable. A thorough consideration, and a careful selection of those which are most valuable [Pg 307] in themselves, and which are most likely to be useful during life, become both prudent and necessary. In all ordinary cases, men act upon this principle. Health, food, and recreation, are all good and useful things; but even from among these we are sometimes compelled to make a choice, and the principle of our decision is always the same. When we cannot procure all, we chuse those which appear to us the most necessary, and abandon the others without regret. A man readily denies himself to sports and amusement, when he finds that he must labour for a supply of food and necessaries; and even the pleasures of the table are willingly sacrificed, for the purpose of securing or restoring the blessings of health. In like manner, those branches of education which are most important for securing the welfare of the pupils, and most for the benefit of society, ought to be selected and preferred before all others; seeing that to neglect, or wilfully to err in this matter, would be injurious to the child, and unjust to the community.—Our object at present therefore is, to enquire what those general principles are which ought to regulate us in our choice of subjects and exercises for the education of youth.

1. The first and fundamental rule which ought to guide the Educationist and the Parent in the selection of subjects for the school, is to chuse those which are to promote the happiness and welfare of *the pupil himself*; without regard, in the first instance at least, to the interests or the ease of his friends, of the teacher, or of any third party whatever.—Children are not the property of their parents, nor even of the community. They are strictly and unalienably the property of the Almighty, whose servants and stewards the parents and the public are. The child's happiness and welfare are entirely his own;—the free gift of his Maker and Master, of which no man, without his full consent, has a right to deprive him. This happiness, and the full enjoyment of what he [Pg 308] receives, both here and hereafter, have been made to depend on his allegiance and his faithfulness, not to his parents, nor even to the public, but to the great Lord of both. This allegiance therefore, is his first and chief concern, with which the will and the wishes, the interests or the ease, of teachers and parents, have nothing to do. If the directions of his Maker and Lord are attended to, he has nothing to fear. There is in that case secured for him an inheritance that is incorruptible, and far beyond the reach or the power of any creature. It is for the enjoyment of this inheritance that he has been born;—it is with the design of attaining it, and for increasing its amount, that his time is prolonged upon earth;—it is to secure it for him, and to prepare him for it, that the parent has been appointed his guardian and guide;—and it is for the purpose of promoting and overseeing all this among its members, that a visible church, and church officers, have been established and perpetuated in the world.

In so far as each individual child is concerned, the parent is the immediate agent appointed by the Almighty for attending to these objects; and although, in a matter of so much importance, he is permitted to avail himself of the assistance of the teacher, he, and he only, is responsible to God for the due performance of those momentous duties which he owes to his child. When therefore the parents, for the purpose of forwarding some trifling personal advantage, or the teacher, for his own ease or caprice, are found indifferent to the kind of exercises used in the school, or to the results of what is taught in it;—doing any thing, or nothing, provided the time is allowed to pass, with at least the appearance of teaching;—they are, in such a case, betraying an important trust; they are heedlessly frustrating the wishes, and resisting the commands of their Master and Lord; they are sapping the foundations of society; and are thoughtlessly and basely [Pg 309] defrauding the helpless and unconscious pupil of a most valuable patrimony.—In committing to parents the keeping and administration of this sacred deposit, reason, conscience, and Scripture, all unite in declaring, that it is given them, not for the promotion of their own personal advantages, but for the child's benefit; and that, while they never can be permanently bettered by its neglect, their good, even in this world, will be best and most surely advanced by a faithful discharge of their duty to their offspring.

These remarks go to establish the general principle, that the parent is not the proprietor, but merely the guardian and the administrator of the child's interests. These interests are of various kinds. And although the above remarks refer chiefly to the spiritual and eternal advantages of the young, that circumstance arises merely from their superior value and importance. The argument is equally conclusive in regard to every one of his temporal concerns. For if both the parent and the child be the special property of God, and if the parent has been appointed by him as the conservator and guardian of the child's happiness, he has no right either to lessen or to destroy it for any selfish purpose of his own. In every case—even of discipline—he is bound to follow the command and the example given him by his Father and Master in heaven, not to chastise his offspring for his "own pleasure," but for the "child's profit." The rule therefore which ought to regulate the parent, and of course the Educationist, in making choice of the subjects and exercises for the school, is, that they shall really and permanently conduce to the *pupil's* welfare and happiness, irrespective of the conflicting interests or wishes, either of the teacher, the parent, or the public. These will usually be in harmony; but as a general principle, the exercises are to be chosen with reference to the welfare of the *child*,—not of the *community*.

2. Another rule which ought to be attended to in the selection of subjects and exercises for the [Pg 310] seminary, is nearly allied to the former, but which we think, from its vast importance, should have a separate consideration. It is this, that a decided preference should be given to *every thing which advances the concerns of the soul, above those of the body;—which prefers heaven to earth,—and eternity to time*.—Man is an accountable and an immortal creature;—and therefore there is no more comparison between the value of those things which refer to his happiness in eternity, and those which refer only to his enjoyments during his lifetime, than there is between a drop of water and the contents of the ocean;—nay, between a grain of sand and the whole physical universe. The truth of this observation, when viewed in the abstract, is never questioned; and yet the educational principles which it naturally suggests are too often jostled aside, and practically neglected. It plainly teaches us, that the young ought to be made aware of the comparative nothingness of temporal and sensual objects, when placed in competition with those which refer to their souls and eternity; and that the subjects which are to be taught them in the school, should tend to produce these feelings.—But this is not always the case; and even when the subjects are in themselves unobjectionable, the methods taken for teaching them frequently neutralize their effects. The national evils which have arisen from this neglect are extensive and lamentable, consisting in an almost exclusive attention among all classes to temporal matters, and to sensual gratifications. These characteristic, features in our people may all be traced, from their exhibition in general society, to the want of a thorough knowledge of those truths which tend so powerfully to deaden the influence of the things of sense and time, and to moderate our pursuit after them. It is in a particular manner at this point that the reckless cupidity, and the debased and short-sighted selfishness of the lower classes, ought to be met and [Pg 311] removed, by the enlightened and kindly instructions of more capacious minds. Society, as at

present constituted, acts as if there were no futurity. Time is the eternity of thousands; and therefore they think only of time. Had they, as rational creatures, but a correct view,—however faint,—of their destination in eternity, their conduct and pursuits would very soon be changed, and their selected enjoyments would become, not only more rational, but much more exquisite. Education is the instrument by which alone this can be effected, whether in the church or in the school; and to this point, both parents and children should be assiduously directed for their own sakes, and for the sake of the community.

Hitherto there has in education been too much of the mere shadow of rational knowledge, without the substance; and the consequence has been, that many parents in the lower classes have never been able to perceive their *own* best interests, and therefore it is that their children by them have been equally neglected. Nor is this only a partial evil, or confined to the lower classes.—It is, on the contrary, when we examine the matter closely, nearly universal. Among ignorant and thoughtless parents, who are either unable or unwilling to look any further than the few short years of life, the training of their children to figure respectably and gracefully during it, may not perhaps excite much wonder;—but that such conduct should be followed by Christian parents, who know that both they and their children have souls, and that there is such a thing as eternity before them both, is truly humbling. Nor is it much for the credit of the philosophy of the present day, that while its promoters admit as an axiom the superiority of moral and religious attainments, they are found in practice to bestow their chief attention, and to lavish most of their approbation on physical investigations and on intellectual pursuits. Every sound thinker must [Pg 312] see, that by doing so, the first principles of philosophy are violated; and many well meaning persons are, by this inverted state of public opinion, insensibly drawn away from the more valuable food provided for them as responsible and immortal beings, to feed on the mere chaff and garbage of temporal and sensual enjoyments; or the more valuable, but still temporary crumbs of the intellectual table. That this practical abuse of acknowledged truths should be found among the ignorant and the depraved, might perhaps be expected; but that it should be witnessed, and yet winked at, by men of learning and study, whose comprehensive minds, although still inadequate to comprehend the full import of an eternity of advancing knowledge, can yet appreciate the comparative insignificance of seventy—nay of seventy thousand—years' investigation into the mysteries of Nature, is very painful. We do not, in saying this, depreciate in the slightest degree the sublime discoveries which are daily being made of the Almighty and his works;—but we say, upon the soundest principles of philosophy, that were all these discoveries multiplied ten thousand times, they could not for a moment compete with what yet remains to be communicated to the successful aspirant after the revelations of eternity. Religion and morals are the only means by which success in that great competition can be gained; and therefore, to a child, a knowledge of all that man has yet discovered, or can ever know in this imperfect state of existence, is really as nothing, in comparison with the knowledge and practice of but one religious truth, or with the slightest advance in the science of morals.—A child once possessed of a living soul is born for eternity. Its happiness has been made to depend, not on the possession of physical good, or of intellectual power, but entirely on its moral condition;—and the physical good it receives, and the intellectual power it attains; are nothing more than means intended by [Pg 313] the Almighty to be used for the purpose of perfecting his moral condition while he is still in this world. The whole period of his existence here, is but the moment of his birth for eternity. Care and enlightened attention to his moral condition during that short period of probation, will usher him spiritually alive and fully prepared for enjoying an eternal weight of intelligence and glory;—while inattention, or misdirected activity now, may no doubt put him prematurely in possession of a few intellectual morsels of this eternal feast, but it will assuredly shut him out from its everlasting enjoyment, and will entail on him comparative ignorance, and a living death for ever.

In this view of the case then,—and what Christian will deny that it is the correct one,—there cannot be a more short-sighted proposition suggested in the counsels of men, than that which would sanction a system of education for an *immortal* being, that either overlooked, or deliberately set aside, his well-being in eternity. The very idea is monstrous. It is a deliberate levelling of man to the rank of mere sentient animals; and is another form of expressing the ancient advice of the sensualist, "Let us eat and drink, for to-morrow we die." By every person of learning, then, and even by individuals of humbler attainments, in the exercise of a plain common understanding, the importance of the rule in education which we are here recommending, must at once be admitted;—That in the selection of truths and exercises for educating and training the young, a decided preference should always be given to those which have a reference to their well-being and happiness, not in time so much as in eternity.

3. In selecting subjects and exercises for the education of the young, those are to be preferred, by which *the largest amount of true and solid happiness is to be secured to the pupil*.—A man's happiness is his only possession. Every thing else which he has, is only the means which he [Pg 314] employs for the purpose of acquiring or retaining it. Happiness accordingly, by the very constitution of our nature, is the great object of pursuit by every man.[29] The means of happiness are no doubt frequently mistaken, and often substituted for happiness itself. But even these conflicting circumstances, when properly considered, all tend to shew, that happiness is the great object desired, and that it is universally sought after by every intelligent mind. By a wise and beneficent arrangement of the Almighty, it has been so ordered, that happiness is to be found only in the exercise of the affections;—and the amount of the happiness which they confer, is found to be proportionate to the excellence of the object beloved. The love of God himself, accordingly, is the first of duties, and includes the perfection of happiness. The love of all that are like him, and in proportion as they are so, ranks next in the scale; and hence it is, that all moral excellence,—the culture of the affections and the heart,—is to be preferred to intellectual

attainments, as these again are to take precedence of mere physical good.

This established order for the attainment of happiness, is in society most strangely inverted. Beauty, strength, honour, and riches,—mere physical qualities,—are generally preferred to the qualities of the mind;—and mental attainments, again, too often command more consideration than moral worth. This is altogether an unnatural state of things; and the consequences of its prevalence in any community, must be proportionally disastrous. How far the modes for conducting the education of the young hitherto have tended to extend or perpetuate this error, it is not for us here to say. But if they have, the sooner the evil is rectified the better. Happiness, as we have said, is the single aim of man,—however he may mistake its nature, or the means by [Pg 315] which it is to be attained. And as it is to be found, not in intellectual power, nor in the possession of physical good, but only in moral culture, it follows, that the attainment of this moral excellence should be the one chief design aimed at in the education of the young.

The benevolence and wisdom of this arrangement are obvious. For had happiness been made to depend on the possession of *intellectual* power, few comparatively could have commanded the time and means which are necessary for the purpose; and had it been attached to the possession of riches, or honour, or any other species of *physical* good, there would have been still fewer. But it is not necessarily attached to the possession of either. Men may enjoy riches and honours, beauty and health, and yet they may be unhappy. The highest mental attainments also, when disjoined from moral excellence, tend only, as in the fallen angels, to stimulate their pride, and to aggravate their misery. But happiness is exclusively and unalterably attached to the cultivation of *the affections*,—to the acquisition of moral excellence;—so that it is equally within the reach of every individual, however obscure, or however talented. Few men can be intellectually great,—fewer still can be rich or powerful; but every man may, if he pleases, be good,—and therefore happy. In choosing the subjects and exercises then for the education of the young, those which tend to the production and to the cultivation of the moral affections,—love to God, and love to men,—are always to be preferred to those which have relation merely to the attainment of *intellectual* acquirements, or the possession of mere *physical* good.

4. In choosing subjects and exercises for the education of the young, reference should be had, all other things being equal, to *the prosperity and welfare of the community in general*.—We have already shewn that, under God, the happiness and welfare of every individual are his own special [Pg 316] property, and must in all cases, therefore, be at his special disposal. No ordinary combination of circumstances will ever warrant an unjust encroachment on what is so peculiarly his own. But the happiness and welfare of an individual are almost uniformly found to be connected with the happiness and prosperity of those with whom he has to associate. The Educationist, therefore, ought to have the welfare of the community in view, while he is selecting those exercises which are specially to benefit his pupil; and he will almost invariably find, that by choosing those subjects and exercises for the individual, which will tend most surely to promote the general well-being of society, he will not only not require a sacrifice of any of the personal benefits to which the child has a claim, but that he will greatly increase their amount, and add to their value. When this is the case, to overlook the good of the community in selecting exercises and subjects for the school, would be of no advantage to the pupils, and would be an act of positive injustice to the public at large.

These general principles, we think, when considered singly, must approve themselves to every thinking mind; and if so, they must be still more beneficial when they are combined, and acted upon systematically in the preliminary arrangements of any seminary. The nearer, therefore, the Educationist can keep to them in making his selection of subjects and exercises, the better will it be both for the pupil and for the community at large, while the benefits expected from an exercise where there is any material deviation from them, will most probably turn out to be delusive, and the exercise itself detected as the mere bequest of an antiquated prejudice, or the temporary idol of fashion. These principles being admitted to be sound in the abstract, will greatly assist us in deciding upon the relative value and appropriateness of some of the propositions which we shall immediately have to submit to the reader; and we would here only [Pg 317] remark, for his guidance, that if, in the following recommendations, he finds an exercise correctly to accord with the above principles, while he yet hesitates as to the propriety of its adoption in the school, or feels inclined to accede to its exclusion,—he ought, in such a case, carefully to review the grounds of his decision, as these are most likely to be erroneous. He has good reason to suspect that he is labouring under prejudice, or is unduly biassed by long cherished opinions, when he refuses the legitimate application of a general law,—a law which he has previously admitted to be sound,—and which is as likely to be applicable to the case in hand, as to any other of a similar kind.

**FOOTNOTES:**

[29] Note R.

## CHAP. II.

### *On the particular Branches of Education required for Elementary Schools.*

In making choice of suitable subjects for the education of a community, there are two considerations which ought to regulate us in our selection. The one is, the indications of Nature respecting any branch of education; and the other is, the peculiar usages of the place and persons with whom the pupil is destined to associate. As an example of the former class of subjects, we may instance reading and writing; and of the latter, book-keeping and the classics. The branches belonging to the former will be found more or less useful to all without exception; while those which rank under the second class, although requisite for some, will be found unnecessary, and generally useless, to many. From the character of the present work, our business is chiefly with the former class; and we shall therefore advert very shortly to a few of them, pointing out the intimations of Nature respecting them, and giving a few hints as to the best methods by which they may be taught. [Pg 318]

And first of all, *Religion and Morals* are clearly pointed out by Nature as a branch of education peculiarly necessary for the young. On this we shall not here again enlarge, but shall merely refer the reader to some of our previous pages, where it has been made sufficiently clear.[30]

Next in importance as a branch of education plainly indicated by Nature, we ought to rank *the principles of Natural Philosophy*. We say next *in importance*, not *in time*; because they are evidently not to be taught to the child in this order, although it will be found in experience that these principles may be communicated by successive "steps" much sooner than is generally thought.[31] Nature begins early; and so should we. The very infant becomes practically a natural philosopher, and continues to act regularly upon the truths or principles which experience enables him to detect. He soon learns that flame burns, that clothes keep his body warm, that stumbling will cause a fall, and that the support of a chair or stool will prevent it. As he grows up he learns the danger of handling sharp knives, hot irons, and burning coals; he learns to detect some of the effects of the mechanical powers, which he frequently applies, although he cannot explain them. This we perceive exemplified in his ingenious contrivances in cutting his sticks, wrenching with forks, hammering with stones, kicking with his toes, and afterwards more powerfully with his heels; in trundling his hoop, in sailing his mimic fleets by the force of his breath, and in adapting to the requisite moving powers his wind and water mills. He even learns to know something of the composition of forces, as we perceive by his contrivances in the flying of his kite, the shooting of his marbles, and the rebounding of his ball. Now, as these adaptations [Pg 319] are never to be ranked under the class of instinctive actions, but have been in every case acquired by actual experience, it shews, that there is an outgoing of the mind in search of principles, and we think it is probable, that these principles are often, although perhaps but dimly perceived, from the various, and frequently successful contrivances of the child in difficulties, and in circumstances when he is desirous of procuring relief. This at all events shews us, that children are very early prepared, and capable of receiving instruction of this kind.

The *importance* attached by Nature to this branch of learning, is not less remarkable, than is its universality. It is the great hinge upon which every temporal comfort of the individual is made to turn. What we have here termed "natural philosophy," is to the body and to time, what religion and morals are to the soul and eternity;—the well-being of both depends almost entirely upon the proper application of their several principles. It is no doubt true, that the principles are not always very clearly perceived; but it is equally true, that the application of these principles will be more easy, more frequent, and much more effective, when they are made familiar by teaching. Hence the importance of this branch of education for the young.

Next in importance as branches of education, and prior perhaps in point of time, come the arts of *Reading* and *Writing*.—Speech is a valuable gift of Nature, bestowed upon us for the communication of our ideas, and *writing* is nothing more than a successful imitation of Nature in doing so. The hearing of speech, in like manner, is closely copied in the art of *reading*. These two arts, therefore, as most successful imitations of Nature, recommend themselves at once to the notice of the teacher as an important branch of education for the young. The one enabling him to speak with the hand, and to communicate his ideas to his friend from any distance; and the other, [Pg 320] the art of hearing by the eye, and by which he can make the good and the wise speak to him as often and as long as he may feel inclined.[32]

Of *Arithmetic*, we may only remark, that the necessity of sometimes ascertaining the number of objects, of adding to their number, and at other times of subtracting from them, indicates sufficiently that this is a branch of education recommended by Nature. It may only be necessary here to remark, that, from various concurring circumstances, it appears, that what is called the Denary Scale is that which is most conducive to general utility. As to the nature of Arithmetic, and the best methods of teaching it, we must refer to the Note.[33]

*Music* is one of Nature's best gifts. The love of it is almost universal; and few comparatively are unable to relish and practise it. Its effect in elevating and refining the sentiments in civilized society, is matter of daily observation; and its power to "soothe the savage breast," has been often verified. To neglect the cultivation of music, therefore, during childhood and youth, when it can be best done, not only without interference with other branches of study, but with decided advantage in forwarding them, is both imprudent and unjust. We say that it is *unjust*;—for while much ingenuity and large sums of money have been expended in producing musical instruments

for the gratification of men, the child of the poorest beggar is in possession of an instrument in the human voice, which for sweetness, variety, expression, and above all, for its adaptation to language, has never been equalled, and stands quite unapproachable by all the contrivances of man. How cruel then in parents or teachers to allow an instrument so noble and so valuable to fall to ruin from the want of exercise! It is to deprive their pupil of a constant solace in affliction, [Pg 321] and to dry up one of the cheapest, the readiest, and the most innocent and elevating sources both of personal and social enjoyment. Of its uses, and methods of teaching in the school, we must again refer to the Notes.[34]

*Dancing* is obviously the sister of music, and is perhaps equally sanctioned by Nature. It is obviously capable of being consecrated and employed for high moral purposes; and its abuse therefore should form no argument against its regular cultivation. That it was so employed by the appointment of God himself, is matter of history; and that it is still capable of being preserved from abuse, cannot reasonably be denied. The stand that has so frequently been made against even the innocent enjoyment of this boon of Nature, is now admitted to be a prejudice, derived originally from its flagrant and frequent abuse. These prejudices are gradually and silently melting away; and it is cheering to see the better feelings of our nature effectively advancing the art to its legitimate place in education, under the guise of gymnastics and callisthenics. That these, however, are but imperfect substitutes for what Nature has intended for the young, is obvious, when we contrast them with the gambols of the kitten, the friskings of the lamb, and the unrestrained romps of healthy children newly let loose from the school. The truth is, that the accumulation of the animal spirits must be thrown off by exercise, whether the parent or teacher wills it or no; and if the children are not taught to do this *by rule*, as in dancing, they will do it without rule, and perhaps beyond the proper limit, both as to time, place, and quantity. Education indeed cannot be expected to flourish to the extent desired, till the mental labours of the school can be occasionally relieved by some physical exercise, either within doors, or in the open air.[35]

The love of pictures and of *Drawing* is also a boon bestowed upon us by Nature, and is a [Pg 322] desirable acquisition for the young. The art may generally be acquired with little trouble, and often with great enjoyment. It is certainly neither so necessary, nor so valuable, as some of the branches of which we have been speaking; but as it may be easily attained, and as its future exercise will always be a source of innocent and refined enjoyment, it ought to occupy a place in every educational institution. Almost every person is gratified by looking upon a good picture; and few comparatively are unable to acquire the rudiments of the art which produces them. It requires but little teaching, provided good copies be procured;—and even these will be frequently unnecessary, where the pupils are encouraged to copy from Nature. The proper methods of doing this, however, must be left to the circumstances of the school, and to future experiments.

With respect to the teaching of *History*, a little consideration will convince us, that it does not consist in the mere communication of historical facts. History is, or ought to be, a science; and the succession of events is nothing more than the implements employed by the master in teaching it. The *facts* of history, like those of chemistry, agriculture, or mechanics, are taught merely as means to an end.—They are the elements from which we derive principles, which are to be practically applied by the learner; and it is *the ability to apply these* that constitutes the learning. The facts upon which any science is based, must no doubt be known before it can be taught;—but they may be known without the science having ever been mastered: For it is not a knowledge of the facts, but the capacity to *make use* of them, that entitles a man to the appellation of a chemist, an agriculturist, a mechanic, or a historian.

Viewing the study of history in this light, we at once perceive, that the teaching which it requires is not a dry detail of dates and circumstances;—but the practical uses which ought to be [Pg 323] made of them. The only legitimate use of history is to direct us how we ought to conduct ourselves as citizens, and how rulers and governors can most safely and successfully manage the affairs of the public, in all the varying events of political change. The teacher therefore is to communicate the facts, for the purpose of turning them to use, by drawing, and teaching his pupils how to draw lessons of prudence, energy, or caution, as regards the nation;—in the same way that Biography is taught for the sake of drawing lessons of a more personal kind, as regards a family or a neighbourhood. Both were practically exhibited in the experiment in Aberdeen; by which it was made obvious, that children, as well as adults, were capable of studying it. Where the circumstances of a seminary will admit, it ought not to be neglected. The mere inconveniences which may for some time attend the introduction of such a mode of teaching history is no good reason for its neglect; and the want of practical elementary books drawn up upon this plan, in the form of successive "Steps," is the chief desideratum, which we hope soon to see supplied.

*Geography* is another branch of education pointed out to us by Nature for the benefit of man. We speak here, however, of physical geography, and not of the historical and political departments of it. These belong more properly to history. The chief object in teaching this science, is to convey to the mind of the pupil a correct idea of this world as a sphere, on the top of which he stands, and of the relative positions of all the kingdoms and countries on its surface. This will be, and it ought to be, a work of time. The more correctly and familiarly the pupil can form the idea of this sphere as a whole, the sooner and the better will he become acquainted with its parts. Acting upon the principles of reiteration and analysis, formerly described, the pupil [Pg 324] ought to sketch, however rudely, the great outlines of the four divisions of the earth, upon a blank, or slate globe, till he can do so with some degree of correctness. The separated divisions may then be sketched on a common slate, without caring as yet for the details; and when this can

be accomplished readily, the same thing may be done with the different kingdoms of which they are severally composed. The child ought never to be harassed by the minute details, till he comes to sketch the countries, or the counties. What is required *before this*, is their relative position, more than their form; and this, upon the principle of analysis, will be easiest and most permanently acquired by mastering in the first place the great outlines.

Children, by mere imitation, will practically acquire the art of *Grammar*, long before they are capable of learning it as a science. It ought invariably to be taught by "Steps;" and the child should have a perfect knowledge of the etymological part, before he is allowed to advance to syntax. The efficiency of this concluding part of grammar, depends entirely upon his familiarity with the former. It will therefore be found here, as in the practice of arithmetic, that the prize will ultimately be awarded, not to him who expends most labour and strength in running, but to him who has made the best preparation for the race.

The art of *Composition*, or the ability to express our thoughts in an orderly and natural form, is the last branch of education to which, as recommended by Nature, we shall here allude. The perfection of this art appears to depend on three circumstances. There must be a clear understanding of the subject upon which the person is to write;—there must, in the second place, be a distinct perception of the most natural order in which it ought to be presented to the mind and imagination of others;—and the third is, an ability to manage these materials with facility, and without distraction of mind, while engaged in writing them. As to the first of these three, [Pg 325] nothing requires to be said here, as the exercises recommended in the previous part of this Treatise will almost invariably accomplish it. With respect to the second, that of presenting the ideas connected with the subject in due and proper order, it may be remarked, that the hints formerly given, as to the natural order of "grouping" objects to be presented to the imagination, will be of great use here, and to them we must refer;[36]—and the third object here required, that of managing the thoughts at the moment of writing them, has been in effect already described and treated of, in a previous part of this Treatise.[37] It is the same kind of ability as that which is required for acquiring fluency and ease in extemporaneous speaking, and is to be gained by the use of the same means. It is here only necessary to observe, that abstract teaching and general directions are not the things most required for forwarding a child in this branch of his education. These, at an advanced stage of his learning, will no doubt be of service; but till the pupil can write with some degree of freedom, they are in a great measure useless, or worse. What is wanted most in our elementary schools, is a successful *beginning*;—suitable exercises to assist the pupil in writing his own thoughts properly, but in his own way. Many methods have been devised to effect this, and with more or less success;—but we believe the most efficient, because the most natural and simple, is that which has been engrafted upon the paraphrastic exercise. In regard to its ease, it is only necessary to say, that a child who can but write a sentence, may begin to practise it;—and its efficiency may be argued from the fact, that while every step is [Pg 326] progressive, the advanced exercises give ample scope for the abilities of the cleverest in the school.[38]

**FOOTNOTES:**

[30] See Part II. chap. x. p. 111. Part III. chap. ix. p. 257, and p. 310-313. For the methods of teaching, see Note S.

[31] Note T.

[32] Note U.

[33] Note V.

[34] Note W.

[35] Note A a.

[36] See pages 215, 216.

[37] See Pages 297, &c.

[38] See Key to Second Initiatory Catechism, pages xxi. & xxii.

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## CHAP III.

### *On the Easiest Methods of Introducing these Principles, for the first time, into Schools already established.*

That the educational principles attempted to be developed in the preceding pages, shall ultimately pervade the great fields of Elementary learning, admits we think of but little doubt; and yet the diminutive word "When?" in relation to this change, forms a question, which it would

be extremely difficult to answer. Every improvement of the kind hitherto has been gradual; and experience shews, that the admission of the most important principles in Science, has been often retarded, rather than forwarded, by undue precipitation on the part of their friends. It is with this historical fact in view that the following hints are now offered, in order to render any sudden change unnecessary, and to enable teachers gradually to feel their way to greater success by *new* methods, without making any material change for some time on the *old*. We speak advisedly when we say, that two half hours daily, if regularly and honestly employed in working out these principles in a school, will do more real good in forwarding the education of the pupils attending it, than all the rest of the day put together. This portion of time, divided between the two parts of the day, would not materially interfere with the usual routine of any seminary, which might still be proceeded with as before, till the teacher saw his way more clearly in enlarging the exercises, and extending the time.

*Younger Classes.*—With respect to the young children who are as yet incapable of [Pg 327] understanding by reading, we would advise that they be repeatedly exercised by a monitor in sections of four or five, during not more than ten or fifteen minutes at a time, by means of the "Scripture Groupings for children." The Key to that little book will enable any monitor, or even scholar, who can read, efficiently to perform this duty. The design here is chiefly mental exercise; but with that mental exercise, the most important and valuable information may be communicated. The monitor is to announce a sentence, and then to catechise on it, taking care to avoid all "Catechetical Wanderings,"[39] and confining himself strictly to the sentence announced, from which the child in that case will always be able to bring his answer.

When a section has been mastered, the children may be encouraged to tell the story in their own way, the monitor taking care that the child is not reiterating the *words*, instead of the *ideas*. A few of the moral circumstances may also be presented to their minds, and the lessons drawn and applied according to their capacity.

*Second Classes.*—Where the children are capable of reading, they may get a section of the "Groupings," or of any of the "First Steps," to read at home. On this they ought to be catechised in school, before reading it there, to see whether it has been previously read and understood or not. This preparation ought to be strictly enforced. They may then read it by sentences in turn, be catechised upon it, have the moral circumstances separated, and the lessons drawn and applied. One section should in general be *thoroughly known and mastered*, before passing to another; and all the previous sections should be frequently and extensively revised, chiefly by the application of their several lessons.

*Higher Classes.*—The whole school, with the exception perhaps of the very young classes, may [Pg 328] be taken together, and catechised on some section of one of the Steps, or on a passage of Scripture previously prescribed. This they ought each to read and understand *at home*, and be prepared to paraphrase it, to separate the moral circumstances, and to draw the corresponding lessons.[40] This will in a short time be easy for them; and to ensure the preparation, the name of each pupil ought to be kept on a separate card, and these being shuffled, the teacher, after asking the question at the whole, may take the upmost card, and require that child to answer it. All must in that case be prepared, as none can know but he may be the person who shall be called on publicly to answer. The application of the lessons will be found the most useful, and to the children the most interesting part of this exercise. In this the teacher supposes a circumstance, or situation, corresponding to the lesson drawn, in which the pupils may be placed; and he requires them to say how they ought to act in such a case. When they give their *opinion*, they must then give their *authority*; that is, they must refer to the lesson, and through the lesson, to the Scripture truth from which it was drawn.

*Natural Philosophy.*—In teaching the principles of *Natural Philosophy*, a select class may be formed, more circumscribed as to number, and from among the more advanced scholars. To these, a section, or part of section, of the "First Step to Natural Philosophy," is to be given to prepare at home,—to understand, and to be ready to draw and apply the lessons,—in a manner similar to that prescribed above, and as illustrated in the Key to that work.

*Writing.*—In teaching the art of *Writing*, upon the preceding principles, the chief object is to [Pg 329] train the pupils easily and readily to *write down their own thoughts*. To accomplish this, a certain portion of their time may be occupied as follows. The teacher reads a sentence, or a paragraph, or, what will perhaps be better, a short story, or anecdote, and requires the whole of them to write it down in their *books* for after examination. These of course are to be examined and corrected, with any necessary remarks by the teacher or assistant.—In this exercise, there is no necessity for circumscribing the pupils as to time,—it being required that they write accurately, grammatically, and neatly, whether in large or small text. To all those who are first finished, some other exercise ought to be provided that they may in that manner usefully occupy the time that may remain of their hour.

*Arithmetic.*—The introduction of the Arithmetic Rod, and its Key, into a school, will be productive of many advantages.[41] The line of figures upon the A side of the Rod, being painted on a board in sight of the whole school, and which is never required to be altered, the teacher has only to announce a sum to be added to each of the figures; the first pupil that is done, deposits his slate on a table, stool, or form, and goes to his place; the next places his slate above his, and the others in the same way as they finish. The answer in the Key will shew their accuracy, and the order in which their slates lie points out their respective merits. Another very important object is gained by this exercise; for the teacher, by recording the time taken by any one of the pupils in adding a particular sum to the line, can measure by the watch the rate of his improvement every month, every week, or even every day. The parents of any child, by means of

the Rod and its Key, can also do this at home with perfect exactness. [Pg 330]

These hints for the regulation of teachers are thrown out with great deference, as they have not been sufficiently tested by actual experiments. Teachers, however, will be able, each for himself, according to the circumstances of his school, and the capacities of his children, to adopt such parts as he finds most effective; and so to modify others, that the end shall perhaps be more efficiently gained, than by strictly adhering to any one of them.—Education in all its parts is yet in its infancy; and these crude hints can only be expected to help it forward to maturity.

**FOOTNOTES:**

[39] See Complete Directory for Sunday School Teachers, vol. i. p. 278.

[40] For these exercises the Teacher or monitor will find himself greatly assisted by means of the "Helps" to Genesis, Luke, Acts, &c. where, besides the lessons, all the explanations are given in the form of a paraphrase.

[41] See Note V.

## THE END.

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[Pg 331]

## NOTES

Note A, pages 45 and 55.—It may perhaps be reasonably objected to this term of "Reiteration," that it is a new term for an act of the mind which has already received another name. The Author's excuse is two-fold. In the first place, he thinks, that any other term which he could have employed, might have been misunderstood, as writers are not as yet at one on the subject. But, secondly, no other term would have included so fully all that he intends to designate by the act of "Reiteration." In this he may be mistaken; but as it is of little consequence by what name an object may be called, provided the thing so named be properly defined, he thought it safest to apply the term he best understood, and which, in his opinion, most correctly describes the act itself.

The same thing may be said of the terms, "Individuation," "Grouping," and "Classification," which may perhaps be nothing more than "Abstraction," "Combination," and "Generalization." His misconception of those latter terms, and of what is included in them, may have led him to think that the mental operations which he has perceived in the young are different. If so, there can be little harm in using the terms here adopted; but if, on the contrary, they do really include more, it would have been hurtful to use a term which had been previously defined, and which did not include the whole that was intended.

Note B, p. 56.—It may be a question, but one certainly of little practical consequence, whether we ought to place the principle of "Individuation," or this of "Reiteration," first in order. The child, no doubt, fixes upon the individual object before he can reiterate it; but it is still this act of reiteration that first impresses the idea on the mind, and constitutes it a part of his knowledge.

Note C, p. 58.—It may be proper here to explain once for all, that it is not the intention of the Author, as indeed he has not the ability, to define scientifically the mental processes which he thinks he has observed in the young. His object is simply to point them out, so that they may be successfully imitated by the teacher in the exercises of the school.

Note D, p. 60.—The fact, that children who learn to repeat words without understanding them, do sometimes acquire the meaning of them afterwards, is no valid objection to the accuracy of this statement. Repeated experiments, in various forms, and with different persons, have established the important fact, that when children at any future period master the ideas contained in the words which they had previously committed to memory, it is not *because* of that exercise, but *in spite of it*. They have attained them by another, and a perfectly different process. It is generally by reading the words from the memory,—thinking them over,—and in that way searching for, and reiterating the ideas they contain. This is much more difficult than when the [Pg 332] person reads for the first time the same words from a book; and it has this serious disadvantage, that it has to be read from the memory *every time* the ideas are required, which is not the case when the ideas are reiterated in the natural way by hearing, or by reading.—On this subject see

the Experiment made before the Clergy and Teachers of Stirling, in July 1833, with "Blind Alick" of that place, who could repeat the whole Bible;—and the Supplementary Experiment to ascertain the same principle, made in the House of Correction in Belfast, before the Teachers and Clergymen of that town, in December 1837.

Note E, p. 83.—Perhaps it may be found, that "Grouping," and "Classification," are only different manifestations of the same principle. But even if it were so, it would have been necessary here to treat of them separately, on account of the very different uses made of them by Nature. The present, be it observed, is not a metaphysical treatise, but a humble attempt to be popularly useful.—See Note C.

Note F, p. 105.—This principle may by some be considered as "instinct," and others may affirm that it is "reason." All that we require to do here is to point out the phenomenon,—not to define it. The name is of little consequence. It is the principle itself, as perceived in its manifestations, that we have to do with, for the purpose of successfully imitating it in our dealings with the young.

Note G, p. 132.—There needs scarcely any farther proof of this than the fact, that barristers, by constant practice, are usually the most fluent extemporaneous speakers. It is also strongly corroborative of the statement in the text, that clergymen generally, and especially those who are most accustomed to the use of extemporaneous prayers and sermons, find most ease in replying to an opponent on any subject that is familiar to them.

Note H, p. 160, & 201.—It is a very remarkable fact, to which the attention of the writer was lately called, that Mrs Wesley, the mother of the Rev. John Wesley, founder of the Wesleyan Methodists, appears to have acted upon the principles here developed. In Southey's Life of that great man, there occurs the following Note:

"Mrs Wesley thus describes her peculiar method (of teaching her children to read,) in a letter to her son John, (the founder of the Wesleyan Methodists.)

"None of them were taught to read till five years old, except Kezzy, in whose case I was overruled; and she was more years in learning than any of the rest had been months. The way of teaching was this: The day before a child began to learn, the house was set in order, every one's work appointed them, and a charge given that none should come into the room from nine till twelve, or from two till five, which were our school hours. One day was allowed the child wherein to learn its letters, and each of them did in that time know all its letters, great and small, except [Pg 333] Molly and Nancy, who were a day and a half before they knew them perfectly, for which I then thought them very dull; but the reason why I thought them so, was because the rest learned them so readily; and your brother Samuel, who was the first child I ever taught, learnt the alphabet in a few hours. He was five years old the 10th of February; the next day he began to learn; and as soon as he knew the letters, began at the 1st chapter of Genesis. He was taught to spell the 1st verse, then to read it over and over till he could read it off hand without any hesitation;—so on to the second, &c. till he took ten verses to a lesson, which he quickly did. Easter fell low that year, and by Whitsuntide he could read a chapter very well; for he read continually, and had such a prodigious memory, that I cannot remember ever to have told him the same word twice. What was yet stranger, any word he had learnt in his lesson, he knew wherever he saw it, either in his Bible or any other book, by which means he learnt very soon to read an English author well.

"The same method was observed with them all. As soon as they knew the letters, they were first put to spell and read one line, then a verse, never leaving till perfect in their lesson, were it shorter or longer. So one or other continued reading at school, time about, without any intermission; and before we left school, each child read what he had learned that morning, and ere we parted in the afternoon, what he had learned that day."—*Southey's Life of Wesley*, Note, p. 429.

In the above simple narrative, there is a distinct reference to the principles of "Reiteration," and "Individuation," and hence Mrs Wesley's great success.

Note I, p. 162.—When the true nature of Education is better understood, it will be found that a child may have advanced far on its path by oral instruction, before it be either necessary or desirable that he should be compelled to read for himself. To assist the parent and teacher in this preliminary part of their duty, the "First Initiatory Catechism," or the "First Steps" to the Old and the New Testaments, with their respective Keys, may be used with advantage,—they having been constructed upon the principles here recommended. But the best Book *to begin with*, will be the "Groupings from Scripture," with its Key for the use of monitors, or older children, who can by its means greatly assist the parent or teacher in the work. In making use of that little book, the sentences are to be announced in whole or in parts to the pupils one by one; and upon which they are to be thoroughly and extensively catechised. As for example, the first announcement may be given thus:—"*God made the first man*," from which the following questions may be formed—"Who made the first man?" "Whom did God make?" "What man did God make?" "What did God do to the first man?" The teacher or monitor ought then to add the additional fact, "that God made the first man *of clay*," and catechise again upon the whole. After this is well understood, he may complete the sentence, "God made the first man of clay, *and called him Adam*." The child will then be able —not to repeat the words only, for that is not the effect of this exercise,—but to communicate the [Pg 334] ideas in his *own words*; which, however, will generally be found to be the very same as in the book. This distinction is most important. When the whole section has been completely mastered, the lessons and their applications may also be taught;—by all of which the mental faculties will soon become vigorous and lively, and the pupil will be well prepared for all the exercises to which he may afterwards be called.

Note K, p. 151.—The art of catechising from any lesson or book, is a very simple one when the principle is understood. It consists simply in selecting the most important words contained in the announcement, and forming a question upon each of them, in such a manner, as to require that particular word from the pupil as the answer to the question raised upon it. For example, when the teacher has in four words announced the fact, that "Jesus died for sinners;" he will be able to form a question from the three chief ones, "Jesus,"—"died," and "sinners." These questions will be, "Who died?"—"What did Jesus do for sinners?" and "For whom did Jesus die?" It is not necessary that the words should be taken up in their order, which may be always left to the discretion of the teacher. For the several parts of this principle, as employed upon clauses, or whole sentences or subjects, see next Note L.

Note L, p. 185.—The Catechetical Exercise has for convenience been divided into three kinds of exercises, called the "Connecting Exercise," the "General Exercise," and the "Verbal Exercise." The "Connecting Exercise," includes those comprehensive questions, which require the pupil to go over perhaps a whole subject, or several sentences, to complete his answer; as if in teaching the Parable of the Sower, the pupil were asked, "What were the several kinds of ground on which the seed was sown?" or, "What is said of the seed sown by the way side?" In answering either of these questions he would have to combine many ideas, and the truths contained in several distinct clauses. This exercise is used commonly in revising several sections at a time after they have been taught.

The "General Exercise," is used in all the advanced classes, sometimes in connection with the Verbal Exercise, and includes those questions chiefly which are formed upon clauses in the book or section taught. As, for example, when the pupil is asked, "What became of the seed sown by the way side?" or, "What did the birds of the air do?" he has to give one or more clauses, containing several ideas, as his answer.

The "Verbal Exercise" has to do only with the words of the clauses, and the single idea which the particular word is intended to convey; as when it is said, "the birds of the air devoured it up;" the questions, "What devoured the seed?" "What birds?" "What did the birds do?" "What did the birds devour?" refer chiefly to the words, and the single ideas which they communicate.

It may be here remarked, however, that although these exercises are divided in theory, they [Pg 335] ought seldom to be altogether separated in practice. In using the Verbal Exercise with the younger classes, many questions will be required which properly belong to the "General;" and in using the "General Exercise" with the advanced classes, neither the "Connecting," nor the "Verbal Exercise," ought to be altogether excluded.

Note M, p. 192.—In communicating knowledge to the young by means of the Catechetical Exercise, care ought to be taken that the truths or ideas be communicated regularly, and not too many at a time. In making use of the "Groupings," or "First Steps," the contents of one section ought to be well understood, and all the circumstances to be made familiar, before the child passes to another. To do otherwise is not to forward, but to retard his advance in the attainment of knowledge. There ought also to be frequent returns upon the sections formerly mastered, so that the truths be more and more firmly fixed upon the memory. This will also be accomplished by means of the lessons from the several moral truths taught, and by their application to the circumstances of ordinary life.

It is also a matter of great practical importance, in teaching any subject, that the teacher confine himself strictly to it, avoiding all kinds of "Catechetical Wandering," by which the minds of his pupils will be distracted and enfeebled if they *cannot* follow him, and by which their attention will be powerfully drawn away from the lesson, if they *can*.—For example, if the subject to be taught be the "Good Samaritan," nothing can be plainer than that the mind of the pupil ought to be concentrated upon the subject, till it be "grouped," and fixed upon the mind and memory as one combined and moving scene, so that one circumstance in the story will conjure up all the others.—This is Nature's plan.—But if the teacher, at the very commencement, when the child has read that "a certain man went down from Jerusalem to Jericho," shall call his attention from the story itself, to ask where Jerusalem was? What was Judea? Who dwelt there? Who was their progenitor? From what bondage were they saved? Who conducted them through the wilderness? Who brought them into Judea? requiring the whole history of the Jews, their captivity, and restoration; the effect is most pernicious, and is fatal to the great design intended by the teacher. It is destructive of that habit of concentration of mind upon a particular subject, which is always the accompaniment of genius; and which ought to be cultivated in the young with the greatest assiduity and care. But this habit of "Catechetical Wandering," does not stop here, for the teacher has yet another word in this first sentence which admits of a similar treatment; and instead of returning to the lesson, he takes up the word "Jericho," by means of which he follows a similar course; "riding off" from the original subject, and leaving the child bewildered and confused, to commence again, to be again interrupted and distracted by other irrelevant questions. Many evils result from this practice; and the cause is obvious. For if the child has been taught these irrelevant truths before, this is obviously not the time to introduce them, when he is [Pg 336] in the very act of *learning a new subject*;—and if he has not been taught them previously, the matter becomes worse; for by this attempt to teach a variety of new things at the same time, some important principles of Nature are still more violently outraged.—*After* the subject has been taught, and the child is called on to *revise* his several lessons, then is the time to combine them, and to point out their various connections,—but not before.

Note N, p. 195.—It will always be found advisable to teach the alphabet to children long before they begin to read; and while they are being verbally exercised on the "Groupings from Scripture," and other books of a similar kind. To do so at home by way of games, will be found

easiest for the parent, and most pleasant for the child. By having the small letters on four dice, (six on each,) and allowing the use of only one till the six letters on its sides are familiar;—and not giving the third, till those on the two first have been mastered; and the same with the fourth, —will be found useful, provided they be only occasionally made use of. A too frequent repetition of the *game* will destroy its effect; and therefore, as there is sufficient time, it ought only to be allowed on proper, and perhaps on *great* occasions. Other contrivances, besides those given in the text, such as making the child guess at letters, drawing letters from a bag, and naming them, &c. will readily occur to ingenious parents or teachers. It should be observed, that as this acquirement is needed but *once* in the child's lifetime, a little pains or trouble ought not to be grudged in forwarding it.

Note O, p. 208.—In using the "First Class Book on the Lesson System," the teacher must take care that the letters and their sounds, or powers, be perfectly familiar to the child before he begins to read. The first lesson, of course, is composed altogether of words new to the child, each of which he must be taught to *read* by combining the powers of the letters composing it;—and he must never be allowed to pass on to the following word, till all the previous ones can be correctly and readily decyphered. Before beginning to the second, or succeeding lessons, the new words occurring in it, (which are prefixed,) must be read and made familiar to him one by one, and explained if necessary. By this means he will soon be able to *pick up the ideas* in his lesson by even a first reading, which is the great end that the teacher ought to have in view.—The capital letters need not be taught till the child comes to them in his reading.—The lessons being consecutive, none must be omitted.

Note P, p. 220.—The nature of successive "Steps" will be better understood by using, than by describing them. The following, however, will give some idea of their design; keeping in mind, that the contents of the several branches must be written out in such a manner as to convey the ideas in the common way. The following is a rude sketch of what the History of Joseph would be like, if the ideas under each branch of the analysis were fairly written out as First, Second, and Third Steps.

ANALYTICAL TABLE. [Pg 337]

SHEWING THE NATURE OF SUCCESSIVE STEPS IN EDUCATION.

THE HISTORY OF JOSEPH.

| Substance of a First Step. | Substance of a Second Step. | Substance of a Third Step. |
|---|---|---|
| | Joseph's father was partial to him. | Jacob loved Joseph best of his family; who brougoht him the evil reports of them; and got a coat of many colours. |
| Joseph was beloved by his father, and hated by his brothers; | And he dreamed that he was to be great. | Joseph told his dream of the sheaves, and his brothers hated him the more. He told his dream of the sun and stars; and his father observed the saying. |
| | These things made the family uneasy. | His brothers would not speak peaceably to him; and envied and hated him; and his father expostulated with him. |
| ——— | ——— | ——— |
| | Joseph was cruelly used by his brothers, | Joseph sought his brothers at Dothan; was cast into a pit, and afterwards sold for a slave. His brothers concealed the crime, and his father mourned him as dead. |
| And although he was long in affliction, | And was made a slave to Potiphar | Joseph was carried to Egypt, and was a slave in Potiphar's house; where he was industrious and faithful; and was tempted by his mistress. |
| | Who unjustly cast him into prison. | Joseph was unjustly put into confinement. He was useful in prison, where a butler and baker were confined. Joseph interpreted their dreams; but was left in prison by the butler forgetting him. |
| ——— | ——— | ——— |
| | He was brought out to Pharoah, | Pharoah was displeased with the magicians. The butler told him of Joseph; and Joseph interpreted his dreams, and was advanced to authority. |
| | And made ruler over all Egypt; | Joseph married and was made next to Pharoah. He collected corn for seven years; Distributed it to all nations; and sold it for the cattle and lands of Egypt. |
| He rose at last to great prosperity. | During which time he behaved with great prudence to his brothers; | Joseph's brothers came to Egypt for food; and he spake roughly to them. He detained Simeon; Brought and entertained Benjamin; and hid his cup in Benjamin's sack. He then made himself known to his brothers. |

| | | |
|---|---|---|
| | And kindly took care of the whole family. | Joseph brought his father and family to Egypt. He settled, supported, and honoured them. He buried his father, and left several charges with his brothers. |

Note Q, p. 225.—In giving a specimen of this mode of illustrating a connected subject, we may only premise, that the method, as a branch of Education, requires that all the general heads should be perceived first, before any of them is sub-divided. For example, Paul's sermon at Antioch, (Acts xiii.) must be perceived by the pupil in its great outline, or general heads, before he be called on to separate these into their several particulars. These heads as given in the Analysis, (Help to Acts, vol. I. p. 187,) are to the following purport: [Pg 338]

"The design of Paul in this discourse appears to be,

I. To conciliate the Jews.
II. To prove that the Messiah had already come, and that Jesus was that Messiah.
III. To remove certain objections against Jesus being the Messiah.
IV. To establish the claims of Jesus as the Messiah; and,
V. To press his salvation upon their notice and acceptance."

When these general divisions, or heads, are understood, either by reading the respective verses which they occupy, or by the oral illustration of the teacher, each of them may then be taken separately, and sub-divided into its parts. For example, the first head, which in the analysis is, "*First*, Paul endeavours to conciliate the Jews by giving a brief outline of their history, till the days of David, to whom the Messiah was specially promised," ver. 17-23. This first of the above five heads, is separable into the following particulars. "1. The condition of the Jews in, and their deliverance from, Egypt;—2. Their history in the wilderness;—3. The destruction of their enemies, and their settlement in Canaan;—4. Of the Judges till the time of Samuel;—5. The origin of the kingly authority in Israel;—and 6. The history of their two first kings." These again may be sub-divided into their several parts, of which the last will form a good example. It appears in the Analysis in the following form:

VI. History of their two first kings.
  i. Of Saul, and the time of his reign, ver. 21.
  ii. Of David, and his character.
    1. Saul was removed to make room for David, ver. 22.
    2. David was chosen by God to be their king, ver. 22.
    3. An account of David's character, and God's dealing with him.
      [1.] God's testimony concerning David.
        (1.) What David was, ver. 22.
        (2.) What David was to do, ver. 22.
      [2.] God's promise to David.
        (1.) A saviour was to be raised up for Israel, ver. 23.
        (2.) This Saviour was to be of David's seed, ver. 23.

Note R, p. 314.—There is not perhaps a subject in the whole range of human investigation that is so much misunderstood in practice, as a person's own happiness. Whatever causes uneasiness, or distress, or anxiety of mind, destroys happiness;—which shews that it is this pleasure, or delight itself,—this exercise of the heart, that we are seeking, and not the money, or the applause, or the sensual indulgences, which sometimes procure it. The heart of man has been made for something higher and more noble than these grovelling objects of sense and time. History and experience shew, that it can never be satisfied with any finite good; and especially, the possession of all earthly enjoyments only leaves the void more conspicuous and more painful. The whole world, if it were attained, would but more powerfully illustrate its own poverty; for even Alexander weeps because there are no more worlds to conquer. Scripture declares, and Nature, so far as we can trace her, confirms it, that man—and man alone—was *made after the image of God*,—and therefore nothing short of God himself can ever satisfy *him*. Heaven itself would be inadequate to fill the soul, or to allay the cravings of such a being. The fellowship and love of the Almighty, and that *alone*, by the very constitution of our nature, can fill and satisfy the boundless desires of the human heart. They who stop short of this, can never be satisfied; while they who place their happiness on HIM, will always be full, because he alone is infinite. The love of God, and the desire for his glory then, are the only true foundation of human happiness. And hence it is, that the perfection of enjoyment, and the whole sum of duty, meet in this one point, —THE LOVE OF GOD. [Pg 339]

Note S, p. 318.—The writer is aware that, in doing justice to this department of a child's education, it is impossible to avoid the charge of "enthusiasm," perhaps "illiberality," or "fanaticism." In what we have urged in the preceding pages, we have endeavoured calmly to state and illustrate simple facts,—plain indications of Nature,—and to draw the obvious deductions which they suggest. We intend to follow precisely the same course here, although quite aware that we are much more liable to be misunderstood, or misrepresented. We shall at least endeavour calmly to put what we have to say upon a true philosophical basis.

We all admire what is termed "Roman Greatness,"—that self-esteem that would not allow the

possessor to degrade himself, even in his own estimation, by indulging in any thing that was mean, or disreputable, or contrary to the unchangeable rule of right. Cato's probity, who chose to die rather than appear to connive at selfishness; and Brutus's love of justice, who could, with a noble heroism, and without faltering, doom even his own sons to death in the midst of the entreaties of his friends for their pardon, and the concurrence of the people;—are but two out of numberless instances from ancient history. Now we ask, if we admire, and approve of men being so jealous of *their* honour, is it to be imagined that the God who made them, and who implanted those high moral sentiments in their breasts, should be less jealous of *his*?—Every one will acknowledge that he is infinitely more so.—And it is in accordance with this true philosophical sentiment, that we come to the conclusion, that to teach religion,—that is, to teach the character [Pg 340] of God, and the duty we owe him,—without what is called the "peculiar doctrines" of Christianity, is to lower the character of the Almighty, and to impugn his holiness, his faithfulness, his justice, and even his goodness;—things under the imputation of which even a high-minded Roman would have felt himself degraded and insulted.

In teaching Religion and Morality to the young, therefore, the pupil must know, that God is too holy to look upon sin, or to connive at it;—too just to permit the very least transgression to pass with impunity;—too faithful to allow his intimations, either in Nature, or in Providence, or in Scripture, ever to fail, or to be called in question, without danger;—and too good to risk the happiness of his holy creatures, by allowing them to suppose it even *possible* that they can ever indulge in sin, and yet escape misery. Where a knowledge of these attributes of Deity is *wanting*, his character must appear grievously defective; but wherever they are *denied*, it is most blasphemously dishonoured.—Hence the importance of even a child knowing how it is that "God can be just, while he justifies the ungodly."

All these perfections, with the additional revelation of his mercy and grace, are exhibited, and greatly magnified and honoured, by the Christian scheme; and it is to the simplicity of this, as the foundation of the child's education, that we wish at present to direct the attention of the parent and teacher.

A child may be taught to know that God hates sin, and that he must, as a just God, punish even the least transgression. There is no difficulty in understanding this simple truth. And it may be made equally clear, that man must have suffered for himself, and that for ever, if God had not sent his Son Jesus Christ to endure in their place the punishment which the inflexible nature of his justice required. To believe that God will pardon sin *without* such an atonement, is, as we have shewn, to sully the character of God; while to believe it, and to act upon the belief, is at once the highest honour we can pay to his perfections, and becomes the strongest possible stimulant to a grateful heart to avoid sin, and to strive to love and to obey Him. This accordingly is the sum of Christianity, when divested of its technicalities; and this is the foundation,—and the only proper foundation, upon which to rear either morality or religion. But it *does* form a solid and ample foundation for that purpose. And there is perhaps no Christian of any sect who will deny, that either child or adult, who simply depends for pardon and acceptance with a holy God, on the substitution of the Saviour, and who, in evidence of his sincerity, strives to hate and avoid sin, and to love and obey God, is not in a safe state.

In teaching these simple fundamental truths to the young, the parent or teacher will find the "Shorter Confession of Faith," of great use. Its "First Step" ought to be taught first; and the second must on no account be proceeded with, till the truths in the first have become familiar. The same rule ought also to be adopted with the second, before passing to the third. The "First Initiatory Catechism" has also been found of great benefit to the young; and which is very easily [Pg 341] and successfully taught by means of its Key.

The foundation being thus laid, the great object of the teacher then is to train the child to duty;—teaching, in a familiar way, what *conduct* ought to be avoided, and what pursued,—what is displeasing to God, and what he delights in. This can only be done, or at least is best done, by drawing lessons from Scripture. The very commandment, "Thou shalt not steal," is dealt with by Nature in this way; for when we examine the operation of the mind, when acting even upon the direct precept, we find that it assumes the form of a lesson, which in that case is only an echo of the command. Scripture example and narrative, however, are always preferable with children; and perhaps the best method of initiating them into the ability to perceive and draw lessons generally, will be to begin and carry them forward by means of the "Progressive Exercises" at the end of the First Initiatory Catechism. Very young children are able to *commence* this important exercise; and the information and directions given in the Key will enable any monitor to carry them forward.

The application of the lessons ought to be the principal concern of the teacher. On this much of their utility depends, and of which the following will afford a sufficient example.

In the 5th line of the "Progressive Exercises," above referred to, the announcement is simply that "Rebekah was obliging,"—from which the child will readily enough draw the lesson, that "we also should be obliging." But to *apply* this lesson, the teacher is to suppose a corresponding case, and to ask the child how it ought to behave on that occasion. For example, he may ask, "If a companion wanted a sight of your book, what should you do?" "Lend it to him."—"From what do you get that lesson?" "From Rebekah being obliging."—"If you saw your companion drop his ball, or his marble, without perceiving it, what should you do?" "Pick it up and give it to him."—"How do you know that you ought to do that?" "From God giving Rebekah as our example, who was obliging."

The field which here opens up for the ingenuity of the teacher for the moral improvement of the

young is almost boundless.

Note T, p. 318.—The method which both Nature and experience have pointed out, as the best for giving a practical knowledge of the principles of Natural Philosophy to children, is to state and explain some general principle, such as, that "Soft and porous bodies are bad conductors (of heat;") and then set them to think, by asking what special lessons that general truth teaches them. This leads the pupil to a train of thought, which will at all events prepare him for the proper lessons when suggested by the teacher, and which will enable him at once to perceive why his mother has to make use of a cloth when using the smoothing iron; why a metal tea-pot must have a wooden handle;—why soft clothing preserves the heat of his body, and keeps him warm;—and why the poker by the fire gets heated throughout, while a piece of wood, the same length and in the same spot, remains comparatively cool.

To teach the phenomena of Nature, out of their mutual relations to the general principle, would [Pg 342] be both laborious and evanescent, because of the want of the great connecting link, afforded by the analytical method here supposed. It was by the above means that the children, in the experiment in Aberdeen, and more especially those in that at Newry, appeared to the examinators to be inexhaustible; they having, during a space of time unprecedentedly short, got hold of principles which enabled them, without any great stretch of memory, and by the association of ideas, to account for hundreds of familiar objects and circumstances, the nature and working of which they had never perhaps thought of before.

The application of the lessons in these exercises is equally necessary, and equally beneficial. It may be *directly* from some of the lessons drawn, such as, "Why is it inconvenient to handle hot irons?" "Because hard bodies readily conduct heat." Or it may be varied by asking the reason of a phenomenon not formerly perceived;—such as, "Why does the fire scorch the foot when it is without a stocking, and not when we have a stocking on?" "Because soft bodies, such as the stocking, do not readily conduct heat." These are sufficient as specimens of the mode of conducting classes upon these principles; the "Steps," and their "Keys," constructed for the purpose, will assist both teacher and pupil in their proper working.

Note U, p. 320.—In teaching children to read, two things are to be specially observed.—*First*, that the child shall know that the letters in a syllable are used merely as the signs of sound, by the combination of which he is to get a *hint* only of the sound of the whole word. This will very soon enable him to teach himself.—The *second* is, that the child shall know that his reading is only another way of getting at truth by words *seen*, instead of words *heard*. This will make him search for the ideas, even while learning to read; and the habit being formed, he will never afterwards be satisfied without understanding all that he reads.

The letters of the Alphabet, with their powers, having been made familiar, the "First Class Book" may be put into the pupil's hand, and the first word taught him by the combination of the three letters,—"Bob." Shew him how the letters pronounced shortly, and rapidly one after another, *form the word*. He will then be able to *read* this word wherever he finds it. The word "has," is to be taught in the same way, and then the word "dog." He must then be asked, "Who has a dog?" and "What has Bob?" till he understands that these three words convey an idea. The second and succeeding lines are to be taught the same way;—the teacher making him read the words in different parts *out of their order*, to take care that he does not repeat by rote.

At every new lesson he must learn to read the words which precede it, and to read them *well* before beginning. The great design of his reading being to collect the ideas conveyed by the words, his doing so is greatly facilitated by his learning to read the words before beginning to the lesson. It is only necessary to remark, that the homely nature of the lessons tends greatly to [Pg 343] produce the effect here designed, and which would not perhaps be so successfully accomplished at this stage in any other way.

Children may be taught to *write* almost as soon as they can read a few of their lessons. Care being taken that they hold the pen properly, they will soon learn to form the letters as an amusement;—and when these are known, they will soon be able to combine them into words. When they begin to write sentences, it ought to be from their own minds, or memories, but not from copies. Writing is merely an imitation of Nature in her operation of conveying ideas by speech; and the nearer the imitation can be made to correspond with the original, the more perfect will it be. Speech is intended solely for the communication of our ideas;—and so should writing. We teach children words and the names of things, but we never teach them to express their own thoughts, by rehearsing after us either long or short speeches of our own. Neither can we so readily teach children to express their own thoughts by writing, if we attempt to do it by making them copy words which others have thought for them, and the ideas of which they themselves perhaps do not perceive. Copy-lines are a great hinderance to the young; and even for teaching the correct and elegant formation of the letters they do not appear to be always necessary.

Note V, p. 320.—Arithmetic, and numerical calculations of every kind, are wrought by what have been termed "the four simple Rules," viz. Addition, Subtraction, Multiplication, and Division. They who are expert and accurate in working *these*, have only to learn the several rules by which they are applied to all the varied purposes of life, to be perfect arithmeticians.

But when the working of these four rules is analysed, we find that, with the exception of the multiplication table, the whole four are merely different applications of the rule of addition. Subtraction is wrought by *adding* a supposed sum to the figure to be subtracted;—multiplication (with the exception mentioned above,) it wrought simply by *adding* the carryings and the aggregate of the several lines;—and division, with the same exception, is also in practice wrought

by a series of *additions*. If then we shall suppose the multiplication table fully mastered, it follows, that the person who has attained greatest expertness *in addition*, will be the most expert in the working of any and every arithmetical exercise to which he may be called.

But *expertness* in arithmetical calculations, is by no means so valuable as *accuracy*;—and upon the above principle, it also follows, that the person who acquires the greatest degree of accuracy and confidence in working *addition*, must, of course, be most accurate in all his calculations. The importance of this principle will be much more prized by and bye than it can be at present;—we shall however shew here how it may be taken advantage of.

Upon the principle of Individuation, we have seen, that a child will learn one thing much better and sooner *by itself*, than when it is mixed up with several others; and therefore we come to the conclusion, that a child, when taught the practice of addition by itself, till he is fully master of it, [Pg 344] both as respects rapidity and accuracy, has afterwards little more to do than to get a knowledge of rules. One month's systematic exercise in *this way*, will do more in forming a desirable accountant for a desk, than a whole year's exercise otherwise. In the one case, the pupil starts to the race without preparation, and with all his natural impediments clinging to him, which he has to disentangle and throw off one by one during the fatigues and turmoil of the contest; while the other, on the contrary, delays his start till he has deliberately searched them out and cast them aside, and thus prepared himself for the course. He then starts vigorous and light, to outstrip his labouring and lumbering competitors, not only in this, but in every after trial of strength and skill of a similar kind.

To follow out this plan with success, the "Arithmetic Rod," containing three sides, has been provided. On one side there is a single line of figures, on the second two, and on the third three. These lines of figures for a school, ought to be painted on three boards sufficiently large for all to see them distinctly. The first line is to be mastered perfectly, before the second or the third is to be taught.

The way to begin with the first line, is to make the pupil mentally add a certain sum to each figure on the board, say two, or seven, or fourteen, or any other sum, beginning always with a small one. He is besides to add the carryings also to each figure, and to write down the sum as he goes on. The beginner may be exercised with the sum of two, or even one, and have the sum increased, as he acquires a knowledge of the method. These sums, as the pupils advance, may be extended to any amount. The Key will shew, in every case, whether the exercise has been accurately performed; and by marking the time in any particular case, the teacher can measure exactly, every week or month, the advance of each pupil.

The mental advantages of this exercise are numerous. Among other things it trains to a great command of the mind; and brings into exercise an important principle formerly illustrated, (Part III. ch. xi. p. 288,) by which the pupil acquires the ability to think one thing, and to do another.

When the pupil is sufficiently expert at one line of figures, he should be exercised upon the B side of the rod, containing the double line. He is to practise adding each pair of the figures at a glance,—till he can run them over without difficulty, as if they were single figures. He is then to add a sum to *them*, as he did on the single line, till he can add the sum and the double figure as readily as he did one. The C side of the rod is to be treated in the same way;—first by adding all the three figures at a glance, and naming the sum of each, till he can do it as readily as if there was but one; and then he is to add any special sum to them as before.

Note W, p. 321.—Children generally delight in music, and seldom weary in its exercise. It forms [Pg 345] therefore, when judiciously managed, a most useful exercise in a school for the purposes of relaxation and variety, and for invigorating their minds after a lengthened engagement in drier studies. It thus not only becomes desirable to teach music in the seminary as a branch of education for after life, but for the purposes of present expediency.

That music may be taught to the young in a manner much more simple than it has yet generally been done, is now matter of experience. The notes are only *seven*, and these are each as precise and definite in proportion to the key note as any letter in the alphabet. There is obviously no difficulty in teaching a child seven figures,—and there is in reality as little difficulty in teaching him seven notes; so that, having the key note, he will, in reading a tune, sound each in its order when presented to him, as readily and accurately as he would read so many figures.

To render this exercise more simple to children, and more convenient in a school, the notes have been represented by figures, 1 being the key note. The other notes rise in the common gradation from 1 to 8, which is the key note in alt. By this means, the teacher by writing on the common black board a few figures, gives the children the tune, which a very little practice enables them to read as readily as they would the words to which they adapt it.

For particulars as to time, &c. see "Shorter Catechism Hymn Book," p. 23 and 24.

Note X, p. 264.—There is perhaps no department in the family economy which ought to be so cautiously filled up as the *nursery maid*; and yet we generally find, that the duties of this office are frequently handed over to any thoughtless giddy girl, whose appearance is "shewy," although she be without education, without experience, and often without principle. Why there has been as yet no regular seminary for the training of young persons of good principles, for the responsible duties of the nursery, is not a little remarkable. Not one of the many valuable institutions for particular classes is so much wanted, and which, if properly conducted, would be a greater blessing to families and to society generally. One of the most beautiful features in our infant schools is the circumstance, that they have tended greatly to lessen this evil, and in some measure to supply the desideratum.

Note Y, p. 268.—The question of rewards and punishments in a public school is a difficult one; and although there has of late been an obvious improvement in this respect, we are afraid that the principles which ought to regulate them are not yet very clearly understood. Hence the contrariety of sentiments on the subject, with little more than mere *opinions* offered to support them. The following few crude thoughts on the subject, may perhaps lead others better qualified to consider it more extensively.

We can all readily enough distinguish the difference between *physical* efforts, *intellectual* efforts, and *moral* efforts; but we are very ready to confound the rewards which, we think, Nature has pointed out as most appropriate to each. For physical exertions, such as the race, or [Pg 346] the wrestling match, physical returns appear natural and appropriate enough; and therefore, money, decorations, or other physical honours, are the ordinary rewards for excelling in any of them. But to desire money as a return for intellectual excellence, appears to every well constituted mind as sordid and unseemly. The reward for the exertion of intellect must partake of intellectual dignity; and hence it is, that esteem, applause, or admiration,—the incense of the *mind*,—appears to be the natural return for such exertions. In proof of this, we may instance the sensible degradation which is felt, when the reward proffered for mental efforts, even in children, takes the form of food, or clothing, or money;—and the kind of estimation in which students hold their medals, books, and other prizes, acquired at their several seminaries. These are never valued for their intrinsic worth, but only as permanent signs of *approbation*, or *admiration*,—feelings which are purely intellectual in their character, and perfectly distinct from the grossness of physical rewards on the one hand, and the affections—the moral incense of the *heart*,—on the other.

All this appears pretty evident; and it obviously leads us to the next and concluding step, which is, that the natural and proper reward for *moral* actions, ought to partake of the moral character. It is the love and affection of those we serve, or who are called on to estimate, or to decide on the character of our actions,—that is the proper, the natural, the desirable return. A little consideration, we think, will shew us, that this, as a general principle, is really correct; and that applause, admiration, or wonder, when they are afforded without *affection*, do not satisfy the heart, that in the exercise of love, seeks love in return.—It is the friendship, the fellowship, the affections of those whom we aim at pleasing, that alone can approve itself to our minds as the appropriate returns for moral actions.

Note Z, p. 299.—The following are a few specimens of the paraphrastic exercise, as employed upon different subjects:—

"But Martha was [*cumbered*] [*about much serving*,] and came to [*him*,] and said, Lord, [*dost thou not care*] that my sister hath left me to [*serve*] alone? [*bid*] her, therefore, that she [*help*] me."

This verse is paraphrased in the Help to Luke by substituting the explanation of the words printed in Italics, and within brackets, for the words themselves, in the following manner:

"*But Martha was* [much incommoded and harassed] [to get every thing in order for the temporal accommodation of Jesus and his disciples,] *and came to* [Jesus,] *and said, Lord*, [art thou indifferent or careless about the circumstance] *that my sister hath left me to* [prepare the victuals, and do all the work of the house] *alone*? [Command] *her, therefore, that she* [leave her seat at thy feet, and come to assist] *me*."

"Every thing [*in nature*] [*shews forth*] God's [*wisdom*,] [*power*,] and [*goodness*;] but the Bible, which is the [*word of God*,] and which was [*written*] by [*holy*] men at [*different times*,] under [*his direction*,] has most [*clearly*] [*revealed*] what [*God is*,] what he has done and what [*we should* [Pg 347] *do*."]

This is paraphrased in the Key to the Second Initiatory Catechism thus:

"*Every thing* [that has been made in the world and sky] [gives clear and constant proof of] *God's* [chusing the best ends, and accomplishing these by the best means,] [his being able to do any thing, and every thing,] *and* [never ceasing to care for, and to promote the happiness of all his creatures;]—*but the Bible,—which is the* [only declaration of God's mind and will to man,] *and which was* [composed, and put, with pen and ink, upon parchment or paper,] *by* [good and pious] *men, at* [dates long distant from each other,] *under* [the care of God, who told them what they were to write,]—*has most* [distinctly and plainly,] [brought into view, and let us know,] *what* [God's character and perfections are,] *what he has done, and what* [is our duty, both to God and man."]

"The [*word of God*,] which is contained in the [*Scriptures*] of the Old and New Testament, is the only [*rule*] to [*direct us*] how we may glorify and enjoy him."

This is paraphrased in the Key to the Shorter Catechism in the following manner:

"*The* [revelation of God's will,] *which is contained in the* [writings] *of the Old and New Testament, is the only* [guide] *to* [give us information] *how we may glorify and enjoy him*."

Note A a, p. 321.—Nature has obviously intended that all men should be both physically and mentally employed; and that, for the proper maintenance of health, the time occupied by *physical* exercise, ought in general to exceed that which is employed exclusively in study. The combination of both in ordinary cases, however, is still more plainly indicated. In the circumstances of the young, physical exercise is peculiarly necessary. The writer looks forward with confidence to a time, when to every seminary of eminence will be attached a sufficient plot of ground for gardening and agricultural purposes, that the physical energies of the pupils may not be allowed

irregularly to run to waste, as at present; but when they shall be systematically directed to interesting, and at the same time to useful purposes. The hand-swing, although an excellent substitute, will never cope in interest, even to a child, with the moderate use of the hoe, the rake, or the spade. Such a system will produce many and valuable advantages to the young. Gardening, by postponing the results of labour, exciting hope, and by its daily advances, encouraging to perseverance, will tend to produce a most beneficial moral effect; and will greatly assist the teacher in establishing and strengthening some of those valuable checks upon the volatility of the young mind, which are exceedingly necessary for the proper conduct of life, but which there is usually but small opportunity of cultivating in youth.

But even then, for the proper conducting of a school, there will, for *in-door exercise*, be something more required than has yet been provided, both as to kind and degree. When we examine a number of children at play, we seldom find them sitting, or even standing for any length of time, when they have space and opportunity to exercise their limbs. The hand-motions of the infant schools, therefore, although excellent so far as they go, do not go far enough; and even the marching of the children is obviously too monotonous, and not sufficiently lively, for throwing off the accumulated mass of animal spirits, which is so speedily formed in young persons while engaged at their lessons. It was to supply this defect that the writer, a number of years ago, made some experiments with a large class of children, and with complete success. The exercise was founded on the singing and marching of the infant schools, and consisted in what is known in certain seminaries, as "Rights and Lefts." The children were taught to meet each other in bands of equal number, and by giving the right and left hand alternately to those who came in the opposite direction, they undulated, as it were, through each others ranks, and passed on to their own music, till they met again on the other side of the room, and proceeded as before. The exercise thus afforded to the upper and lower extremities of each child, the expansion caused to the chest, and the play given to the muscles of the back and body, are exceedingly beneficial; and the whole being regulated by their own song, gives healthy, and not excessive exercise to the lungs and the whole circulation. [Pg 348]

It was also found, that this amusing employment for the young, was capable of great variety. Instead of two bands meeting each other in *lines* in opposite directions, and parting, to meet again at the other side of the room, they were formed into a circle, one-half moving in one direction, and one-half moving in the opposite, by which means the circle was never broken. It was also found, that one of these circles, containing six or eight children only, could move within the other when it contained a larger number, without those in the one interfering in the least with those of the other; and the effect became still more imposing when *between* these, and *without* them, two other bands of children joined hands, united in the song, and moved round in opposite directions.

These details may appear trifling to some; but experience will soon convince practical men, that in education, as in Nature, the most simple means often produce the most powerful and the most beneficial results.

**THE END.**

Transcriber's Note

Footnotes listed as a Note followed by a letter are gathered together at the end of the book.

Some inconsistent hyphenation and spelling in the original document has been preserved.

Typographical errors corrected in the text:

| | | |
|---|---|---|
| Page | 20 | he changed to be |
| Page | 28 | vallies changed to valleys |
| Page | 36 | pullies changed to pulleys |
| Page | 38 | bye changed to by |
| Page | 45 | recal changed to recall |
| Page | 57 | inconsistences changed to inconsistencies |

| | | |
|---|---|---|
| Page | 59 | recal changed to recall |
| Page | 61 | he changed to be |
| Page | 67 | oppreseive changed to oppressive |
| Page | 68 | word "is" added |
| Page | 73 | recals changed to recalls |
| Page | 77 | harrassed changed to harassed |
| Page | 103 | missle changed to missile |
| Page | 113 | decrepid changed to decrepit |
| Page | 120 | pronouned changed to pronounced |
| Page | 142 | slighest changed to slightest |
| Page | 144 | intance changed to instance |
| Page | 150 | educa- changed to education |
| Page | 152 | Jessus changed to Jesus |
| Page | 166 | fourteeen changed to fourteen |
| Page | 168 | Pestalozzie's changed to Pestalozzi's |
| Page | 169 | unnaccountable changed to unaccountable |
| Page | 183 | recal changed to recall |
| Page | 192 | missing word "be" supplied |
| Page | 195 | indispensible changed to indispensable |
| Page | 197 | exceeedingly changed to exceedingly |
| Page | 197 | recal changed to recall |
| Page | 210 | comtemplation changed to contemplation |
| Page | 211 | soffa changed to sofa |
| Page | 234 | than changed to then |
| Page | 245 | Terrestial changed to Terrestrial |
| Page | 277 | forwarned changed to forewarned |
| Page | 280 | aplication changed to application |
| Page | 283 | speciment changed to specimen |
| Page | 302 | faultering changed to faltering |
| Page | 326 | Princiciples changed to Principles |
| Page | 333 | desireable changed to desirable |
| Page | 339 | faultering changed to faltering |
| Page | 340 | ungodily changed to ungodly |

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