

PESTALOZZI

AND HIS PRINCIPLES.

THIRD EDITION.

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13. Arrange the descriptions in the 9th paragraph under three heads, and say how you would characterize Pestalozzi's method of teaching.
14. Under what difficulties did Pestalozzi labour and how did he meet them?
15. How would you describe the first and second steps of education as given by Pestalozzi?
16. What was the difference between the first and second steps of education?
17. What are the first two things to be done in education, and what are the advantages of the second of these?
18. What influence had Pestalozzi on the education of the world?
19. How do you account for Pestalozzi's failures, and view

PART I.

A LECTURE ON THE LIFE OF

PESTALOZZI

BY THE

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WITH NOTES ORIGINAL AND SELECTED.

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"Pestalozzi is no more. After a short but painful illness, he died near Neuhof, in the Canton of Argau, in the month of February, 1827." "The sun went down in clouds, and the old man, when he died at the age of eighty, had seen the apparent failures of all his toil. He had not, however, failed in reality. It has been said of him that his true function was to educate ideas, not children; and when, twenty years later, the centenary of his birth was celebrated by schoolmasters, not only in his native country, but throughout Germany, it was found that Pestalozzian ideas had been sown, and were bearing fruit, over the greater part of Central Europe."—*Quick*. England has of late also been a seed-plot, and greatly benefited by it.

Now this can only be effected by the quickening power of the word of the truth of the Gospel, presented, illustrated, expounded, applied in the teaching and training of the child, and blessed by the Holy Spirit. And it is thus that the Institutions named have taken the educational principles of the Swiss philanthropist, and applied them to a true Bible and Evangelical training, in which children are not dealt with as being, but to be made, children of God.

PART II.

PESTALOZZI AND HIS PRINCIPLES.

BY

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WITH NOTES, ORIGINAL AND SELECTED,

BY ROBERT DUNNING,

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dience and of prescribed diligence, but a preparation for independent action. Whatever class of life a pupil belongs to, whatever calling he may be intended for, there are certain qualities in human nature common to all, which constitute the stock of the fundamental energies of man. We have no right to withhold from anyone the opportunities of developing all their faculties. It may be judicious to treat some of them with marked attention, and to give up the idea of bringing others to high perfection. The diversity of talent and inclination, of plans and pursuits, is a sufficient proof of the necessity of such a distinction. But we have no right to shut out the child altogether from the development of those faculties also which we may not for the present conceive to be essential for his future calling or station in life. Who is not acquainted with the vicissitudes of human fortune, which have frequently rendered attainment valuable that had been little esteemed, or been led to regret the want of application to an exercise which had been treated with contempt?"

The principles of Pestalozzi are more fully set forth in a Lecture of the late Rev. Dr. Mayo, delivered at the Royal Institution, Albemarle Street, in May, 1826. Of this we avail ourselves.*

* We often hear much of the methods of Pestalozzi, many of which were supposed to have been introduced into this country by Sir J. Kay-Shuttleworth and others. The fact is that Pestalozzi originated few methods, and those, in

general, were not particularly good. Pestalozzi was not a man of methods, but of principles, and his system is emphatically one of principles upon which his disciples have based methods. None can lay claim to be a Pestalozzian who is ignorant of the principles of teaching, of government, and of education. The philosophic mind of Pestalozzi could not be satisfied with mere methods of instruction, however good. He must needs go deeper, and discover the principles of school management. To guide him in teaching he looked on the one hand at instruction, on the other at the nature of the child for whom the instruction was designed. This led him to make an analysis of the different branches of instruction, resolving each into its elements, and teaching these elements one by one before presenting them in their given combined form as in the usual branches of instruction. It was in accordance with these principles that the elementary subjects of Number, Form, Place, &c., &c., were discovered, and thus introduced into our Infant Schools and Nurseries with such success. Pestalozzi further ascertained whether a subject of instruction was of an inductive or deductive character, and adopted modes of teaching appropriate to each, reserving the more difficult subject and its corresponding method for higher stages of development,—and he determined whether the subject was one to be observed in its facts, and reasoned out to its principles, or one to be communicated to the children. It was such distinctions which gave rise to the methods of induction, deduction, and direct communication. In connection with the operations of the human mind, Pestalozzi discovered many of the laws by which these operations are regulated, and finally concluded that, as in the material world to be successful we must act in conformity with those physical laws which govern it, so in the education of children we must act in conformity with the known and uniform tendencies of their nature. For his guidance in the discipline and moral training of children Pestalozzi contemplated on the one hand *the design*

Principle 1.—Education should be essentially religious.—Its end and aim should be to lead a crea-*

of school government and the constituents of a healthy, complete, moral character, based on the principles of the gospel; on the other, the laws of a child's moral nature, together with the influence of intelligence on both the affections and the will. From these he discovered the method of obtaining power over children, and the spirit in which that power should be administered. It was thus Pestalozzi came to the conclusion that the parental spirit must possess the teacher, while kindness, sympathy, impartiality, and a good example, mingled with judgment and authority, should be its manifestations. Pestalozzi would also add the pastoral to the parental spirit, and lay all stress on good methods of instruction as securing interest and voluntary attention, and thus rendering much discipline unnecessary. When children are kept busy, he averred, they have no temptation to naughtiness, and the teacher's duties are light, whilst evil is prevented, rather than cured. For the principles of education, as a whole, Pestalozzi looked to the connection between the child's present state and its future condition and character. Pestalozzi considered that God had not only given man a nature, and a sphere of duty in which this nature is to act; but a destiny to be attained by the workings of a character in which he plays an essential part. It was thus, that the system of Pestalozzi was a system of principles; and the methods founded on these are so certain, so satisfactory, and so effective. Whilst, therefore, Pestalozzianism is thoroughly practical it is based on the nature of children and the connection of their present and future state. Moreover, Pestalozzian practice is not mere art, but art supported by the abutments of science—scientific art.

* This does not mean merely that religion must be taught, but that all things must be taught religiously. Religion is

ture, born for immortality, to that conformity to the image of God in which the glory and happiness of

essential to education, and not essential in the sense of important, or being "a leading principle," which are the usual acceptations of the term; but essential as entering into and pervading school-work, just as the essence of anything enters into and pervades that thing. The spirit and power, the principles and motives, if not the words of religion, must be present and ready to manifest themselves in all parts of school work, as the blood is in every part of the body, penetrating and pervading through the whole system, and existing in all its constituent parts. These subjects denuded from the sacred volume would then be brought to bear on the ordinary relations, duties, and concerns of the children. The religion of the school-room would not be an incidental thing, or one occasionally introduced as a subject of instruction, not something based upon education, but intimately connected with it, the guiding, all-controlling spirit of every action and movement. It would not be merely formal, verbal, nominal, dogmatic, or even practical; but religion in spirit, in aims, in methods, in associations, in principles, in practice. There would be not only religious lessons, and religious precepts, but religious influence, and religious example. In this pervading and essential character religion had its place in the school of Pestalozzi. Neither to obviate a religious difficulty, nor to square with the practices of the mere perfunctory teacher, would Pestalozzi have been satisfied with religious instruction and observance during one hour, banishing all thought and mention of it during the other hours of the day. He pleaded, not indeed for human forms and symbols of faith, as adopted by particular Churches, but for the ubiquity of the religious principle, at all hours and in all doings in the school-room. This necessarily implied

immortality consists. In pursuing this end, means strictly analogous to the Divine dealings with man the presence of the Word of God, and the free inculcation of its truths, precepts, and promises.

It is striking to notice the thoroughly Christian character of this principle. The first Churches of Christ did not separate their religious services from the rest of life, and give them alone the name of worship. To them, as the heritage of the Lord, the whole of life was worship, and every act sanctified by the Holy Ghost an acceptable service, being dedicated by motive, by purpose, by desire. Hence the terms "worship," "service," "sacrifice" are never in the New Testament applied exclusively to acts of devotion, whether public or private, but embrace the whole life. "Present your bodies (or your bodily actions), a living sacrifice. . . . which is your reasonable service." "Pure religion (worship) and undefiled. . . . is to visit the fatherless and widows in their affliction, and to keep himself unspotted (in the transactions of life) from the world." "Do good and communicate for with such sacrifices God is well pleased."

The pervading character of religion in true education is well illustrated in the practice of the Abbé Girard. Whilst his staple commodity in teaching was language, and his pupils were progressively advancing in the acquisition of knowledge, the truths of morality and religion were so blended with their instruction, that they received them almost unawares. His anecdote of a visitor sets this in a striking light. "In 1820, one of the secular clergy, who was a teacher at Genoa, was sent by his superior to Switzerland, to visit schools and borrow from them a better system than that which was then practised in Italy. He remained for some weeks in my school, during which time we had very little conversation. He was busy collecting his facts, and I was well content he should do so. When he had completed his observations he came

in the scheme of redemption, are to be employed. The instructor must regard himself as standing in God's stead to the child; the Divine dealings with man, particularly as illustrated in the life of the Redeemer, present the model by which his dealings with the pupil are to be regulated. As by the revelation of God's love the spiritual transformation of man is accomplished, so must the earthly teacher build all his moral agencies on the manifestation of his own love towards the pupil. Then, as "we love God because He first loved us," so will the affections of the pupil be awakened towards his instructor, when he feels himself the object of that instructor's regard.* Again, as love to God generates

to me and said, 'I have discovered the secret of your method. Your real object all the while is religion and morality, though you appear to be attending to other things. This is the true and only way to succeed.'" However slow Protestant teachers are to learn this principle, or deficient in carrying it out, Roman Catholics are by no means either slow or deficient in applying it to Romanism, as the following instructive statement shows:—"Some copy-book covers for schools have been forwarded to us," says the "Record" newspaper, "by a correspondent from Stalybridge, to show how the Romanists are using every means to advance their influence. On the back of the broad-sheet containing the Multiplication Table is printed a well-engraved picture of the Virgin Mary." An attempt to carry out this principle is made by ourselves in this Institution in Lessons on Scripture Natural History.

* The means of making education essentially religious are

conformity to His will, so will obedience to the instructor be the consequence of awakened affection.

the teacher's spirit and character, the teacher's general management and discipline, a sense of the Divine presence in the minds of the children, and instruction. To what Dr. Mayo has said respecting the first and second of these may be added that the power of religion should be seen in every department of the teacher's school life. It should be seen in the teacher's manner, it should regulate her temper, guide her in her work, strengthen her in her difficulties. She should come to her school imbued with the sentiments of true religion, which will lead her to love her young charge, to take pleasure in mingling with them, and to act simply and condescendingly towards them. She should come from her closet to her school-room diffusing a holy influence. Her self-denial and her sobriety, which will lead her to be watchful against her failings, and to avoid caprice and partiality, should lead the children to respect religion by respecting her. Her gentleness and sweetness should lead them to love it and her in return. Her bright cheerful countenance, the result of peace within and a spirit of good-will to all, should teach them that religion ensures happiness. In this way would she win souls to Christ whilst making religion essential in herself. On the third and fourth, means of making religion essential in school-work, Dr. Mayo elsewhere remarks that "the God of nature is to be seen in His works, the God of all grace contemplated in His written Word, and felt in His influence. A sense of the continual presence of God as the Giver of all good, and the Judge of all conduct must be made a pervading sentiment in the minds of the pupils." To carry this out, at all lessons in physical science, as those in geography, natural history, natural objects, and phenomena, not only must the power and wisdom of God be exhibited, but the

This is the basis of a right education ; for as "love is the fulfilment of the law," so in love must be sought the elements which, in this fulfilment, have their ultimate result. Thus, while other modes of instruction may convey the *doctrines* of Christianity, the system of Pestalozzi, equally adapted to the attainment of this result, is also, when duly executed, a practical illustration of its *temper* and *spirit*.*

Principle 2.—"Education should be essentially moral.†"—The principles and standard of its morality

truth that He is good to all, and His tender mercies are over all His works. Such lessons without reference to God are very defective. At the Bible lessons, the character of God in its bearing on the wants, the character, and condition of man, as a sinner, must be amply displayed. A sense of God's goodness will lead to love and gratitude, of His greatness and power to reverence and admiration, and of His presence as a judge to holy reverence and fear, and a watchful conduct. Thus, by the sanctifying operation of the good Spirit, God will be felt in His influence.

*Education will never fulfil its Heaven-appointed mission until the essential and pervading character of religion is recognised as one of its best instruments. This is certainly the "training" which is enjoined on parents with respect to their children, and, through them, on teachers, who are their coadjutors, or substitutes. Where it is adopted, the power of influence, of example, of association will come to our help, and, by repetition, be confirmed into a habit, which, by God's grace, will be matured into a principle.

† What is *moral* education? wherein does it differ from *religious* education? Dr. Mayo distinguishes them from,

should be derived from the precepts of the Gospel, as illustrated by the example of the Redeemer, and in yet connects them with, each other; but not a few would completely separate them. It may, therefore, be useful to young teachers, amidst the present strife, to give them an accurate idea of "moral" as applied in education, and then ask them to consider whether they could conscientiously teach morality without the Bible, without religion. The term moral is variously applied in connection with the work of the teacher.

(1.) It means good, virtuous, honest, &c., and is opposed to the terms immoral, vicious, or bad. In this sense moral instruction includes reasoning, expostulating, pointing out both what is virtuous and what is vicious, and to the practice of the one and to abstention from indulgence in the other. All are agreed on this point.

(2.) The term "moral" is used as relating merely to the conduct of men to each other, in contradistinction to the term religious, which relates to the duties of men towards God. It is in this sense that the term describes a subject of instruction in our schools. In this sense, too, we may have morality without religion, whilst we cannot have true religion without morality. In many schools the instruction is religious, whilst the training is merely moral. Alas! there is a growing party in this country who desire to divorce religion from morality in the school, both in theory and practice. And so it has come to pass that we have been asked to accept "Ethics for Board Schools" as a guide to teachers out of "the Religious Difficulty"—a treatise which inculcates morality without any recognition of religion as its basis or principle.

(3.) The term moral is applied to the doctrine or duty drawn from a story, a fable, or a parable; and no good practical teacher will ever fail to turn fiction to this profitable use.

(4.) Another meaning of the term is that of "subject to the

culcated throughout the Bible.* Moral instruction, to be availing, must be the purified and elevated

moral law." And hence we are said to possess moral responsibility; a condition which every pious teacher will explain to his pupils as they increase in age, experience, and intelligence, and thus endeavour by God's blessing to make them realise the main-spring of duty.

(5.) Again, moral is used in opposition to animal or physical, as in the expression "moral courage," that is the courage of moral principle, not that of the animal passions or brute force. This distinction an intelligent teacher will not fail to make in the training of children, giving to each its proper place in the scale of moral excellence.

(6.) The term "moral" as used in the science of education relates to the feelings, as distinguished from the intellect, which has reference to the thoughts. Hence the division of education into intellectual and moral. This application of the term is in accordance with the primary signification of the word, which means manners or conduct, and is an appropriate application, since conduct in general, particularly in the case of children, proceeds from the feelings rather than reflection. It is on the same ground that the plural noun "morals" is used for the practice of the duties of life.

(7.) "Moral" has also the meaning of "probable" as applied to evidence, being thus opposed to "absolute" or "certain." Hence it is that we speak of "moral" or "absolute" certainty; and the teacher has his two great classes of subjects of instruction, the moral and the absolute, as history and mathematics, &c., with which to cultivate and store the minds of his pupils.

The term "essential" has the same meaning when applied to moral education that it had when applied to religious; it is therefore unnecessary to explain it here.

* The morality which, according to Dr. Mayo, should form an essential element of education, was fully and clearly ex-

expression of a moral life, actually pervading the scene of education.* In carrying on the business of

pressed by Mr. Ogle in an address which he delivered to our students and teachers at one of their half-yearly meetings. "By *morality*," he said, "we do not in this Institution mean merely that ordinary good conduct which men may practice from natural constitution or from the force of a good education, or from good example. Neither do we mean, when we speak of giving moral lessons, the giving the children at one hour a Scripture lesson, in which we teach them the principles and precepts of the religion of Christ, and at another hour a moral lesson, for example, on perseverance, or on filial love, or on humanity—speaking of these as if there were no such being as our Lord and Saviour Jesus Christ and his Gospel, precisely as a heathen philosopher might do. We have no such view before us. By morality we intend that practice which results from obedience to Christian precepts, which is founded on Christian principles, the application to the ordinary events and duties of life, of the doctrines and precepts of the Christian religion. And in our moral instruction and training we apply to children in their ordinary conduct, in the schoolroom and playground, the precepts which they learn from the Bible. Thus education, to be essentially moral, should be derived from the precepts of the Gospel as illustrated by the example of the Lord Jesus, and conducted on the principles of the Word of God."

* It is not enough that the moral lessons be regularly given, systematically, clearly, and even impressively delivered. They must be illustrations of the teacher's own life, and echoes of the spirit and conduct of the school, in order to reach more readily both the understanding and heart. It is a happy thing when the teacher can refer to himself as walking by the rule which he lays down, since the sight of such

the school-room, or in watching over the diversions of the play-ground, the motives and restraints of the

consistency will inspire the children with a willing readiness to imitate. It is happier still when the children feel that their teacher is a model of all the social virtues. Such a feeling calls out their sympathy, excites reverence and love, and leads to an unflinching obedience. The example and spirit of the pupils have also great influence. If rudeness, violence, untruth, and injustice prevail amongst them, the moral instruction will be unavailing; every good desire excited will be stifled by the impure atmosphere around them. But the teacher has the tone of the school very much at his own command. It is a point to which a good teacher will give every attention, and he will not rest till the public opinion of the school is on the side of gentleness, goodness, and truth.

Moreover, moral education includes the *active training* of the pupils and the direct cultivation of the moral nature. Nothing is more common than to mistake both moral and religious instruction for religious and moral training, and to be satisfied with the former. Granting the auxiliary character of moral instruction, we know that it falls short of what is required for a high state of morality. The only moral culture worthy of the name is that which consists chiefly in leading children to act. Instruction is of course necessary, as a child must be taught what is right in order to practice it; but is not sufficient, any more than is the theory of music to make a man a musician, or a knowledge of perspective or of lights and shades to make a man a painter. Between the knowledge of what is right and the doing what is right there are two stages, feeling and volition. We must know, feel, and will. Action is the only real education in morals. Moral conduct and moral habits are to be secured

purest morality, and those only, must be employed.* Moral diseases are not to be counteracted by moral poisons; nor is intellectual attainment to be furthered at the expense of moral good."† Under the conditions of the organic character of education will be found additional remarks on this last point.

by training up a child in the way he should go, not merely by teaching him. A great mistake is often made by religious parents on this point, and they compare unfavourably in this respect with many people of the world. It is not considered by them that, whilst moral principles cannot exist without religion, moral habits may. Now parents who are religious generally confine their attention to the former. From an exclusive zeal to establish moral principle, they are often guilty of neglecting moral habits,—their children *hear* rather than *do*. Thus metaphysically, or educationally, we may account for the unhappy abnormal state of the children of many of the disciples of Christianity; a state of things bearing a striking contrast to the disciples of Judaism. The children of light are in this respect not wise in their generation.

* In dealing with children, whether in repressing or punishing for evil done, or in encouraging, stimulating, and rewarding for good done, or attention or diligence manifested, teachers are continually rousing motives for action or acting on those in operation. But these motives are of very different kinds; some are high, some low, some selfish and bad, others generous and pure. Therefore in carrying on the business of the schoolroom, or watching the diversions of the playground, the teacher should only employ those motives and restraints which are of the purest and highest morality.

† Place-taking is a poison which stirs up an ignoble am-

Principle 3.—“*Education should be essentially organic.*” A stone increases in size by the

bition. Prizes and rewards are poisons which bring into operation covetousness, which is already too strong. Partiality and putting the children in opposition to each other also stir up envy, jealousy, and hatred. It is at the expense of moral good that a teacher bestows more attention upon learning than conduct, is more pleased with cleverness than goodness, presents more and greater stimuli to the learning of lessons than the practice of virtues, and rewards the exercise of the intellect and not the dispositions of the heart. Throughout all this there is evidence of the presence of the intellectual teacher rather than that of the moral educator.

* The organic character of true education springs from the organic nature of the mind, which is the subject of education. The human soul is not a uniform and inert mass of being, but a complicated living, active structure, an organism of the highest order. The means used to educate it must obviously be suited to its nature; the mind must be dealt with as an organized existence. It has laws by which it exists, develops, and improves, and its treatment in harmony with these laws constitutes an organic education. The term is therefore used by Dr. Mayo metonymically; the instrument being put for the object on which it operates. The organic character of education was the fundamental principle of the system of Pestalozzi, and from it sprang most of his other principles, such, for example, as: 1, That education must be progressive, commencing with a natural and well-laid foundation. 2, That education must be spontaneous, the child being a willing co-operator with the teacher. 3, That each faculty must be developed carefully, gradually, steadily. 4, That education must be an entire work, embracing the hand, the head, and the heart. 5, That education must be harmonious; not partial or antagonistic to itself. These and

mechanical deposition of matter on its external surface; a plant, on the other hand, grows by the continual expansion of those organs which lie folded up in its germ. Elementary education, as ordinarily carried on, is a *mechanical* inculcation of knowledge, the process being similar to that by which a mineral substance is increased, that of accretion. In the Pestalozzian system it is an *organic* development of the human faculties—moral, intellectual, and physical—from within by a process of expansion or growth. Moral education does not consist in preventing immoral actions in the pupil, but in cultivating dispositions, forming principles, and establishing habits. Nor does intellectual education attain its end by the mere communication of intellectual truths, but rather in the development of those faculties by which truth is recognised and distinguished. And, lastly, physical education, instead of confining itself to instruction in particular arts, must be directed to the improvement of the outward senses, the increase of activity and strength, and those circumstances which are essential to the promotion of health.

“Organic education has its conditions,—these are *activity and liberty*. *Activity* is the great means other secondary principles of the Pestalozzian system of education as enunciated by Pestalozzi are taken up further on in the text and the notes.

of development, for action is the parent of power. The sentiments of the heart, the faculties of the mind, the powers of the body, advance to their maturity through a succession of actings in conformity to their nature; *i.e.*, all are strengthened by exercise and dwindle through inactivity. Opportunities for the exercise of moral virtue should therefore be carefully sought out, or at least diligently applied. To cultivate benevolent dispositions, the pupil should be invited to relieve the indigent; to overcome his selfishness, he should be induced to share or part with the objects of his own desire. In intellectual culture every branch of instruction should be so presented to the pupil's mind as to bring into the highest activity the faculties most legitimately employed upon it.

“That there may be that action that leads to development there must be *liberty*. The pupil should have sufficient liberty to manifest decidedly his individual character, and must be dealt with accordingly. Nothing short of this will render the education really organic.* It may be possible, by a system of coercion, to produce a negative ex-

* But this liberty is perfectly consistent with a natural and proper restraint. It is so with the body. The body contains physical ligaments and bands, but they do not obstruct action. Artificial ligaments, on the contrary, tighten the feet, the fingers, or the body. So it is morally and intellectually, where the wisdom that can preserve by a necessary restraint, is not united with the liberty of action that promotes growth,

terior morality which shall endure as long as the circumstances on which it is built remain in force; but no interior moral power, that shall survive a change of outward circumstances, can be formed, unless such moral liberty be enjoyed as leaves to the judgment room for discerning between good and evil; to the moral choice the adoption of the one and the rejection of the other; to the conscience the approval and the rewarding of right, the condemnation and punishment of wrong. Restraint may be necessary to prevent wrong, to check the career of passion, to arrest the progress and diffusion of moral mischief, to remove the incentives to evil, and to restore to that position in which the moral principle may again exert its influence. Still it is only a negative, not a positive means. All the real development of man, moral, intellectual, and physical, arises from moral, intellectual, and physical *liberty*. Human laws, guarded by vindictive enactments, may be respected even by slaves, but the law of God, wheresoever and in so far as it is obeyed, is written in the hearts of a willing people in the enjoyments of Christian liberty."*—*Dr. Mayo*.

* It is a great mistake to confound negation and restraint with positive training; and yet how frequently are prohibitions and punishments regarded as all that are necessary in the moral education of the young. In restraining children from wrong-doing we are far from teaching them to do what is right. They are merely debarred from all choice, and have

Principle 4.—“*Education must be directed by an influence essentially parental.*” Where there is no mother there can be no child, is as true morally as it is physically. It is the order of providence that maternal affection and maternal wisdom should call forth the dawning powers of childhood, and that the wisdom and firmness of a father should build up and consolidate the fabric which reposes on a mother's love. The Pestalozzian instructor supplying the parent's place must combine the characters of each relation, but exhibit them in different proportions, according to the age and disposition of his pupil. Other plans of education are built on the principles of political relations, the system of Pestalozzi carries in its bosom the pure and gentle influence of domestic life. There the glowing affections, the fearless confidence, the easy intercourse, the gentle spirit, of the family circle, are

no part or lot in the matter of right and wrong except as mere passive instruments. All moral actions spring from motives; these act through the will, and choice becomes necessary and marks us as moral and responsible beings. But if our children are so restrained that they cannot choose whether they will act on a right or wrong motive, or so constrained that they are not in the habit of choosing, how can their moral nature be undergoing the process of training? Punishments are restraints; *i.e.*, not direct and positive means of producing moral good, but merely negative forces. The real use of punishment is to deter a child from doing evil, not to induce him to do good.

transplanted into a field of greater extent, but of congenial soil; and the delicate bloom of moral sensibility, which the rude contact of the playground seldom fails to destroy, is watched over with care, and sheltered with tenderness."—*Dr. Mayo.**

* The family character of the school was a principle that Pestalozzi held with great tenacity and placed next to that of the organic character of education. We are better acquainted in this country with the intellectual side of Pestalozzianism, than with the moral; with its methods of teaching, than with the spirit of government which animated it. But assuredly the schoolmaster or schoolmistress who can only teach intelligently and even interestingly develop ideas, and discipline the intellectual powers is but half a Pestalozzian. Without the parental spirit, with all its concomitants, there is no true and complete Pestalozzianism; there may be instruction, but not education. To lead to the clearer apprehension of this principle, it may be remarked that there are four different kinds of rule differing from each other in spirit and character. There is, first, military rule, which is characterized by severity and followed by no love, confidence, or moral elevation. There is, secondly, political rule, characterized by what is cold, heartless, formal, almost mechanical, and often aided by planning and plotting. Justice is done, but in the way of business or policy, and whilst giving a sense of security and exciting no malignant passion, such government cherishes little that is attaching, elevating, or improving. There is, thirdly, parental rule, which unites many elements. This alone comes from the heart and goes to the heart. It is marked by the *interest* that is ever watchful of good to the child; of the *tenderness* that sympathizes with and even anticipates the child's sorrows and joys; of the *patience* that does not readily murmur, is never weary in well-doing for

Principle 5.—“The development of the faculties should be harmonious.”

In some cases the intellectual, the child, and often hoping against hope. Then, fourthly, there is pastoral rule, which unites watchfulness, diligence, faithfulness, and kindness. It springs from benevolence, a sense of duty, and Christian devotedness, but it has none of the instinctive love of the mother. It inspires with respect, confidence, gratitude, and affection. As Dr. Mayo tells us in the text, other plans of education are based on the principle of political relations, whilst the system of Pestalozzi carries in its bosom the gentle loveliness of domestic life. Would that we had more of this spirit in our schools, and then would the teacher acquire and merit the endearing title of Father by which Pestalozzi more frequently was known among his pupils.

The origin or history of this principle is interesting and instructive. The longer Pestalozzi persevered in his efforts at Newhof, the firmer grew his conviction that education was the principal, indeed the only hopeful means of permanently improving the people, and emancipating them from the thralldom of ignorance, vice, and oppression, and of the numberless evils springing from these. But the more he gave himself up to these ideas, and the more he knew of those he would benefit, the more did he feel the necessity of something deeper, more searching and influential than any system of instruction, however practical, intelligent, interesting, and extensive, or discipline, however rigid and productive of order. In fact, he had no faith in anything which sprang from mere external sources for elevating the degraded and permanently blessing all. This was the first step he took. But Pestalozzi had not only faith in an education which would reach and influence the principles of human nature, but he also felt persuaded that it was an appointed means of God for the happiness and holiness of His creatures. He

or moral, or both, are sacrificed to the physical ; in some the moral, or physical, or both, to the intellectual. A Pestalozzian educator respects the

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saw education stamped with the Divine sanction, and was reassured. This was Pestalozzi's second step of progress.

Having arrived at these conclusions, it next occurred to him that in the wise arrangements of God there should somewhere be found the natural sphere of education, provided with the necessary power for accomplishing the ends in view. He consequently cast about for some ground the most extensive and some power the most irresistible in its action by which to animate the new system of improvement. Then it was that the thought occurred—a thought so natural and familiar to every one, but so little seen in that light in which it then flashed on his mind—that the earliest, the most extensive, the best adapted sphere for education is the domestic circle, in which the infant and early years are now spent ; but, alas ! often spent without the benefit of a kind and salutary direction, and but too frequently under the baneful influence of bad example. Amidst these reflections it also occurred to him that the most energetic power in the whole range of the moral world was sympathy and affection ; and that of all human sympathies and affections, the purest and strongest was maternal love. This was the power to be gained for the great object which he had in view. The family was the fulcrum, the mother's love the lever by which the philosopher of Zurich would obtain power to move the moral world. In a nobler cause than that of the ancient mathematician might he (and perhaps did he) exclaim, *Heurêka, heurêka!* Henceforth his maxim was, "Where there is no mother, there is no child, morally as well as physically." This was Pestalozzi's third step of progress, and for some time the training of mothers to do their duty intelligently and effectually was the subject of his strongest advocacy. In his letters to Greaves he gives expression to his warm feelings in

eloquent strains. Let mothers and teachers hear him on this topic. "I should not anticipate," he says, "half the consequences for the real benefit of mankind, as long as our system of improvement failed of extending to the earliest stage of education ; and to succeed in this we require the most powerful ally of our cause, as far as human power may contribute to an end which eternal love and wisdom have assigned to the endeavours of man. It is on this altar that we shall lay down the sacrifice of all our efforts ; and if our gift is to be accepted it must be conveyed through the medium of eternal love. This object of our ardent desires will never be attained but through the assistance of the mothers. To them we must appeal ; with them we must pray for the blessing of Heaven ; in them try to awaken a deep sense of all the consequences, of all the self-denial, and of all the rewards attached to their interesting duties. Let each take an active part in that most important sphere of influence." The estimate which Pestalozzi formed of this prize, the tenacity with which he held it, and the place which he assigned it in his system, ought to be most thoroughly realized. It took that undivided possession of his mind which a familiar thought will sometimes acquire from a novel combination. It inspired him with the most sanguine hopes ; it was from that moment the nucleus, the luminous centre of all his efforts, and the foundation of his system of moral influence and moral elevation. But in due time Pestalozzi became dissatisfied here, and he then made his grand final discovery. He would carry the parental feeling into the schoolroom, and convert the schoolroom into a home. He saw that the family was the original school—God's model school in the beginning of the world. The trainers of children, according to the order of nature, are their parents, their brothers and sisters. "And depend upon it,"

rights of each. He fortifies the body by gymnastic exercises, while he cultivates the under-

he came to assert, "only so far as we conform the school to a family in spirit and character, it will be imperfect; it will bear the impress of human, rather than of Divine, wisdom." Henceforth his motto was, "Schools are families on a large scale." The channel in which his thoughts ran might be expressed in the following formula:—That as the family is the nursing-place of society, Heaven's own ordained means of rearing up to all that is great and good, and the mother's love is given to secure that end, education must be of a family character and conducted under the influence of the maternal spirit—a thinking love.

The parental spirit of the schoolmistress, however, should be no matter of accident. It ought not to depend merely upon impulse, which may rest on temperament, or upon sympathy with the founder of our system, which may be mere matter of imitation, but ought to be felt as a necessity from the nature of the case, and as a matter of principle based on the most cogent and substantial arguments. And, 1st, It is reasonable. The schoolmistress has taken the parent's place to a great extent, and consequently has involved herself in the parent's responsibilities. Now, Pestalozzi demanded that those who undertook the parent's duties should possess the parent's spirit in its *interest* in the best welfare of the child; in its sympathy with his joys and sorrows; in the *patience*, which will not flag or murmur. Nor did Pestalozzi merely preach this as a doctrine, but practised it himself. 2nd. Nature calls for it. We cannot expect either the trusting confidence of a child, unless we show somewhat of the affectionate feelings of the mother; or the affectionate obedience of the child, unless we show somewhat of the tender watchfulness of the mother; or, the reciprocating gratitude of the child, where there is not the persevering care of the mother. God has ordained the one

nastic exercises, while he cultivates the under-

for the other. We are very exacting at the hands of children, forgetting that we ourselves have a part to act. Our treatment of the child and the character springing up in him correspond as cause and effect. Deficiencies in the training of the child must ever produce corresponding deficiencies in his character. Witness the absence of many emotions in children reared in orphanages, where, with all the kindness experienced they lack maternal interest, maternal tenderness, and maternal patience. 3rd. The effects of possessing this spirit are equally imperative. It will give a particular tone to the rewards and punishments of the school. Punishments will be administered with sorrow rather than anger; and the future good of the children considered rather than the present convenience of the teacher. Attention to their wants will be given with kindly interest; mischievous rivalry in the shape of place-taking and similar practices will never be adopted; mutual help and sympathy will be encouraged instead of a spirit of triumph at each other's failures. The parental spirit will inspire with gentleness towards the timid, patience with the slow and the dull, and compassion for those labouring under physical or other defects. 4th. Examples which it is our duty to imitate require this spirit. In God and in Christ, we have it pre-eminently exhibited. Amongst the various names taken by God is that of Father, whilst Christ receives the same title. The love of the former is seen illustrated in the father of the prodigal, the love of Christ was displayed in apologizing for His poor remiss disciples, praying for His enemies, and pleading their ignorance to his God as their excuse. 5th. And to those who have been trained on the system of Pestalozzi, as a species of *argumentum ad hominem*, I would say that the parental idea is the grand feature of Pestalozzianism; at least, it was a leading idea of Pestalozzi himself; and he not only felt but practised it.

standing and trains the sentiments.* He endeavours
If we call ourselves Pestalozzians let us be consistent and worthy the name. Let every teacher think of these things, and ever strive to realise the weight and tenderness of a relation which combines the parent with the pastor. Let parental interest, parental tenderness, parental patience, be united with pastoral watchfulness, pastoral diligence, pastoral faithfulness.

* The term harmonious does not exactly express the distinctive idea of this principle, although Dr. Mayo introduces it afterwards. Entire and harmonious are terms distinct in idea and also in the selection of means, though combined in practice, as will appear in a succeeding note. The principle would be more exactly stated thus :—"Education should be an entire work." It should be a complete system, not superficial but thorough, not partial but penetrating, regulating, and training the entire being, meeting all his wants, circumstances, and character. Education to be thus complete, and universal in its application, must be fivefold, so as to meet the fivefold nature of the child. It must be *Physical*, to meet the requirements of his bodily nature ; 2. *Intellectual*, for the cultivation and storing of the powers of thought ; 3. *Esthetical* in relation to the sense of the beautiful ; 4. *Moral*, for the feelings, and the conduct in relation to man ; and 5. *Spiritual*, to meet the wants of the soul in reference to God. Pestalozzi would have considered any system of education necessarily defective as a whole which neglected the faculties under any of these divisions, or which did not make provision for as high a degree of cultivation as their respective capabilities admit, whatever partial excellence or influence it might boast. It would not be an entire work, and the pupil would be but partially benefited.

The connexion between this secondary principle and the

to preserve the equipoise in each, as well as between all the three departments ; to mingle firmness with sweetness, judgment with taste, activity with strength. His object will be, not to develop a disproportionate strength in one faculty, but to produce that general harmony of mind and character, which is the most conducive to the happiness and usefulness of the individual." *—*Dr. Mayo.*

great fundamental principle of the organic nature of education may be stated in a full and formal manner as follows :—
~~As education is of an organic character, and all the faculties and powers of the child are essential to his well-being, it should be complete and entire, and its business should be to develop and perfect all the elements of the child's nature.~~

* This is not mere universality of cultivation but harmony, which consists of a fitting together of parts, so as to form a connected and uniform whole—not a mere equipoise, but a concord. Education would be an entire work, were the faculties cultivated by it singly, as if independent of each other ; but it is harmonious when they are cultivated, not in opposition to each other, but in their organic connexion, all directed to the same point, all working together to produce one result. It is thus that they form an organic whole, and hence a harmonious education is but one application of an organic education. The importance of the application of this principle in education may be easily demonstrated, whilst at the same time will appear the service rendered by Pestalozzi in propounding it. There is no doubt that harmony originally subsisted among the elements of man's nature. By the fall however, man became depraved, that is changed from a good state to a bad. Speaking of course

That true education consists in the harmonious development of all the faculties with which man is metaphysically, not theologically, this change consisted, not only in the faculties becoming excessive, deficient, or misdirected, in some receiving too much exercise, and in others too little, but also in their proportion and harmony being destroyed. In the restoration of man this proportion and harmony must be restored. The first step in the process is regeneration, and there cannot be a true Christian education without the application of this principle. The necessity of harmonious operation is beautifully exhibited in the figure of the apostle, in which he compares the members of the Christian Church to the members of the human body, and urges that each has a specific work to perform, whilst all derive their power from the same source, and all should contribute to one end by a mutual co-operation. Again, as in architecture, proportion is beauty, and parts mutually aid and support each other, in order to form a harmonious whole, so it is in education. In physiology, too, it is only as the organs of the body are brought into activity in their natural connexion and dependence, that the strength, completeness and health of the body are secured. The design of education is in like manner to establish unity and harmony in man; unity of purpose promoted by harmony of operation—loving and energetic co-operation—harmony within, and harmony with what is without in reference to both time and eternity, to God and man, leading us to ascribe glory to the one, and perform offices of good will to the other. Thus would be produced that balanced character which is the result of a harmonious development. This harmonious development has reference to three things—1st, to *the elements of the child's nature*. With regard to his moral nature, the lower feelings must be brought into subjection to the moral sentiments, as they were evidently designed to be. The

gifted, is continually asserted by Pestalozzi, who endeavours to prove it in the following way. He moral sentiments must be under the dominion of the moral judgment; conscience, which is the candle of the Lord, searching all the inward parts. The feelings, the desires, the affections, and even the conscience must be enlightened by the intellect from the altar of sacred truth, and both reason and conscience, thus enlightened, must be brought under the dominion of God, *i.e.*, under subjection to His will. In reference to *the intellect*, its perfection seems mainly to consist in the proper adjustment of the observing, the reflecting, and imaginative faculties—in other words, of the powers by which the knowledge of things exterior to ourselves is acquired; and the powers by which that knowledge is turned to account, either in the new combinations of fancy, or deductions of reason. An unusual deficiency in either, stamps the whole intellectual character with defect and antagonism, if not imbecility. A knowledge of the external world is valuable to its possessor only so far as he can combine and generalize its elements, or turn it to practical purposes; and the power of combination is only available in so far as it is united with the habit and the power of collecting materials on which to operate. 2nd, to *the end of the child's being in lifetime*, whether he is to be agriculturist, artizan, merchant, professional man, or prince. Such a training of the faculties should be given as will enable him to move in his future position with pleasure and advantage both to himself and his fellow-men. Diversity of sex, and the consequent difference of future occupations, come under this head, rendering modification in the education of different individuals necessary. 3rd, to *the last and highest end of man*, which is perfect harmony and eternal union with God. To effect harmony here, cultivation must be so conducted and blessed by the Spirit of God, that all the child's powers, whether of body or soul, will be

declares that "it is the proper business of education to develop the man, to keep in view all his rendered subservient to this great purpose, and will co-operate to effect it; or, at all events, will not be allowed to be in any way opposed to it. In the training of immortal beings for eternity, no element discordant with this object must be introduced, no minor end be allowed to engross attention. At the same time, it must not be forgotten that the battle for eternity is to be fought in the field of the world, and, consequently, with a view to this object, the young are to be prepared for the world. Secular instruction is, therefore, not inconsistent with religious teaching; and those who would reduce the amount of secular instruction to the smallest possible amount, teaching religion almost exclusively, make a great mistake. Religion includes within its sphere the religious performance of duty, not only in relation to God, but also to man. But to perform our duties to man, we must be qualified to discharge them as intelligent and responsible beings, possessing a personal concern and interest in what they do, whether for others or for themselves.

The methods by which the teacher may promote or hinder this equilibrium are various.—1. An *entire education*, if judiciously conducted, will contribute to a *harmonious education*—it gives the energetic hand, the clear head, and the warm heart, which, united in the cause of well-doing, exhibit glorious harmony. 2. In educating children, never lose sight of certain leading internal powers, for on their cultivation the harmony to be secured will, humanly speaking, depend. These are conscience, the natural arbiter of the will, and the ruler of the internal life; reason, or judgment, the conscience of things intellectual; taste, the conscience of things beautiful; and faith working by love. These being in all children especially cultivated, other qualities may, as it were, be suffered to blend into them more in their own way, and in the promi-

faculties, to aim at their culture and perfection, not singly and apart from each other, but as a whole, nence and proportion assigned to them by the character of the individual mind to which they belong. Conscience, reason, taste, and love, may be likened to the essential notes of a musical composition, which are always there and, sometimes, in fixed positions, yet far from causing monotony, they blend harmoniously into the less essential notes, softening and enriching the most varied and exquisite strains, and adding to the character and originality of each individual melody. 3. Care must be taken not to put down with one hand what is built up with the other. Either through ignorance or inattention fatal mistakes are daily made in this respect by both parents and teachers. One would suppose that the ravages of the Fall were sufficient, but the upheavings, the irregularities, and the disorders produced by the agency of sin in the crust of the moral world, are increased by agencies that ought to be employed for their counteraction. For instance, attempts are often made to remove sinful passions. But, how? Often by the encouragement of others that are worse. Forgetting the overgrown condition of selfishness, we encourage it in children by our system of prizes and place-taking, &c.; and then with an inconsistency hardly accountable, we are disappointed at our own success. Admitting the superiority of the moral nature of our children to their intellectual, and that it is the former that has suffered most by the Fall, we, notwithstanding, sacrifice moral to intellectual improvement; we send our children to school to *think* rather than to *feel*, to *know* rather than to *act*, and to acquire a smattering of crude ideas rather than to acquire the habits, tastes, and principles that best fit for a life of happiness, usefulness, benevolence, and piety. We find some of our children remarkable for the activity and strength of some faculty or group of faculties, whilst deficient in those of

and by a simultaneous though gradual process. A child is endowed with all the faculties of human nature, but undeveloped—a bud not yet opened. When the bud expands every leaf unfolds, not one remains behind. Similar to this should be the process of education; no faculty of human nature but must be treated with attention, for their co-agency is necessary to ensure success.*

others. We designate such disproportionate beings geniuses, and have them educated as if all the other faculties were to be absorbed into those already too strong. Only particular studies are engaged in, only congenial exercises are attended to. The child is to become a great one thing, poet, painter, musician, or engineer, and consequently, everything not directly contributing to that end is rejected. The distortions of nature are thus increased, a caricature upon humanity is produced, some special production comes forth at the expense of the discharge of general duty, or, what is more likely, the individual comes out into life a piece of conceit or eccentricity, fitter to boast than to execute, to blast than to bless, the victim of a general unhappiness, or the object of occasional envy or constant contempt. To escape such results as these let us attend to the harmonious development of the faculties, and experience its beneficial consequences.

* Many English educators have propounded this principle of education, but it remained for Pestalozzi to give it due form, make provision for its application, and impart to it a practical bearing. Dugald Stewart, the distinguished author of the *Philosophy of the Human Mind*, thus describes it:—

“The essential objects of education are, first, to cultivate all the various principles of our nature, both speculative and ac-

Pestalozzi was accustomed to look at man under a threefold aspect, as a moral, an intellectual, and active, in such a manner as to bring them to the greatest perfection of which they are capable; and secondly, by watching over the impressions and associations which the mind receives in early life to secure it against the influence of prevailing errors, and so far as possible to engage its prepossessions on the side of truth.” According to Dr. Whewell, education is not merely the acquisition of a certain amount of knowledge, but such a training of the human powers as may render them capable of vigorous exercise. All education is imperfect, “in which the attainment of these ends is not made the prominent object. If the reason be exclusively cultivated to the disregard of the other faculties of the mind, the education is imperfect; if the faculty of language is the exclusive subject of culture the education is illiberal, though hundreds a-year may have been expended to procure it. A liberal education is not a partial, but a universal development of the chief faculties of man.” Another writer says:—“I call that education which embraces the culture of the whole man with all his faculties—subjecting his senses, his understanding, and his passions to reason, to conscience, and to the evangelical laws of the Christian revelation. There is also the perfection of beauty in education, which is a species of moral perfection. But in character, as in architecture, proportion is beauty, therefore, let there be proportionate culture of all the parts of the human being.” And Mme. Necker de Saussure, in her “*Progressive Education*,” says:—“It has almost always happened that instructors have been too much influenced by partial and confined views. They have not troubled themselves about the cultivation of the faculties when communicating their instruction; and when convinced by experience of the necessity of this, they have still overlooked the importance of preserving these different faculties in harmony with each other. They have

a corporeal being. Hence his practical axiom—Education is to deal with the heart, the head, and the hand. How shall their expanding faculties be directed? Which of them call for the most diligent attention? Which have the most important bearings on the future welfare of the child?

Pestalozzi rightly considered that the last question must be decided in favour of those of the heart, that it had the first and especially prominent claim to attention. He compared it to the spring of a watch, or the main wheel in a piece of complicated machinery; and yet a teacher or parent may be puzzled as to the relative importance of different faculties, and the consequent proportion of attention they separately demand. "But what can be the use of the utmost possible exertions, unless regulated by accuracy of ideas, correct judgment, not only entirely neglected many which are as essential as the enlargement of the mind; but even when occupied exclusively with the improvement of the mind, they have not taken a general view of the whole of its attributes. Sometimes the memory has been cultivated, while the imagination has been entirely neglected; and sometimes the faculty of investigation has been invested with such high powers, that it has been thought possible for the pupil to discover for himself all the wonders of science, and so making no use of the stores of knowledge accumulated by time. And thus it will be, as long as the attention of the instructor is bestowed more upon the science he wishes to teach than on the pupil who is to be taught; as long as he is more desirous to form a living encyclopædia, than an intellectual and moral being."

and, above all, the control of a firm and steady will? What, again, can be the real use and merit of schemes, however deep or ingenious, if the energy or exertion be not equal to the boldness and skill of conception; or even if these are combined, but are not working for an end worthy of themselves, and beneficial to humanity?

"It is obvious, then, that a mere cultivation of the faculties of our animal and intellectual nature will be found absolutely insufficient as a substitute for those of the heart. But again, we may suppose the case of one full of good intentions, his heart overflowing with amiable dispositions, and his zeal ever ready to patronize and promote any enterprise that has for its object the good of society. This constellation of excellencies may glow and sparkle in vain; such a temperament, however finely constituted, may yet live to little purpose in reference to others. The reason is obvious; the heart, the grand wheel in the human mechanism, may have been long and actively at work, but for want of being connected in due time with those other powers of human nature, whose co-operation is equally essential, it has failed of producing that health and vitality which would otherwise have pervaded the system. The faculties of man must, in fact, be so cultivated that one shall not predominate at the expense of another, but each be excited to its true standard of activity."

The recognition of this fundamental principle, which Pestalozzi so clearly propounded, led to quite new views on the subject, and he sought to introduce and establish a more effective and enlightened system of popular education.

How shall the expanding faculties be exercised and directed? The great means to be employed in moral development Pestalozzi held to be love. The mother's love draws out the child's love; the mother's care and tenderness awaken the first dawns of faith; the child feels safe in her arms; he confides in her word; what she says he believes; and her will is the law to which he yields and which he obeys. Thus it is in the mother's arms that the moral character is first developed, and moral education passes its first stage. Rightly to direct and exercise the nascent faculties and sentiments, is the next point; and here, God himself, our heavenly Father, as early as possible, must be presented as the first object of love—His superintending providence as the object of faith, and His will as the rule of life. Thus, as we have seen, moral faculties are first called forth by the circumstances with which God has surrounded the child. But the impulse thus given to these faculties must be directed and controlled by precepts deduced from revelation, and the conscience trained to recognise and acknowledge these precepts; so that constant short-comings being thus made evident, the child may be prepared to listen to a Saviour's love

as manifested in His wondrous work of man's redemption.*

* Not only love, but the whole of the moral faculties of the child must be brought into exercise and cultivated, in order to make education an entire work. As the child advances, all the various feelings must be trained on their appropriate objects,—for example, *the social feelings* should be drawn out by the presence of companions, *the love of approbation* by praise, *the love of activity* by giving plenty of work to do, both physical and intellectual, *the love of home* by making it happy, speaking well of it in school, and by giving school a family character, *caution* should be cultivated by warning against danger, *benevolence* by presenting objects of pity, *courage* by accustoming to brave opposition and evil, *respect* by presenting venerable objects, *conscience* by presenting right and wrong, &c., &c. Then, the *intellect* should be cultivated by the discipline of varied thought kept in vigorous exercise—thought as varied in its character as are the operations of the intellect. Care must be taken to surround the child with, or to present the things that will call out his various powers. The observation must be exercised in every direction until it becomes acute. Habitual attention must be brought into operation until it becomes concentrated and sustained. The power of *simple suggestion* must be regularly and systematically used, not merely in the acquisition of knowledge, but for the purpose of creating those early associations which have a lasting effect on the tastes and character. The faculties of conception and imagination should be daily exercised until the former attains to clearness, precision, strength, and versatility, and the latter to the power, not only of clearly apprehending the rich imagery of the poet and the painter, but of making creations of its own. *Memory* must be in regular operation, laying up its stores and recalling them at will, until it

It is hardly possible to conceive the blighting chill which the affections receive when the child is

becomes susceptible, capacious, retentive, ready, and faithful. The powers of *abstraction* and *generalization* which convert the child into the man must, in due time and degree, be exercised, that separate facts may be changed into general truth, and the essentials of things be comprehended through their accidentals, and principles through details. Next to imagination these faculties form new creations, and raise above the varying hues of the real into those of the idealistic and the unchangeable. The proper reflecting faculties of judgment and the reasoning powers, with a true foundation laid in well exercised abstraction and generalization, must be called out on their appropriate objects, both of contingent and absolute truth, the former in the regions of physical, mechanical, and social science, morals, and history; and the latter on form and number in their various qualities, relations, and applications to both science and art. And, finally, as to the physical nature of the child, the corporeal powers must in like manner be developed and strengthened by a system of gymnastic and other exercises, so arranged as to bring all the organs of the body into play. To carry this out there must be a playground, supplied with sufficient variety of apparatus to afford exercise to all the muscles of the body. And the teacher must superintend and encourage the exercises with as much regularity as she attends to other departments of her duty. Moreover, she must complete the work of physical education by attending, as far as possible, to the conditions of health and activity, such as, good air, light, temperature, ventilation, cleanliness, changes of posture, marching, singing, &c. Wholesome food and proper clothing, however necessary elements of physical well-being, are not under the control of teachers.

transferred from the warm sunshine of a mother's love to a teacher who governs by fear, works by machinery, and rules with the rod. This is the source of many a moral failure. The true Pestalozzian is not a teacher of this class. On the contrary, he presents himself at all times to his pupils in the parental character; and by practically evincing to them that their welfare and comfort are wisely and steadily pursued, confidence is inspired; and confidence habitually felt, gives an amiable, noble frankness, and an unsuspecting fearlessness of character. He regards coercion and restraint as evils, but, having to deal with a fallen and perverse nature in his pupils, he sees that they are necessary evils; he therefore allows as much liberty as is compatible with a healthy discipline.* On this point Dr. Mayo's eloquent remarks have already been introduced in connexion with "organic education."

* A successful education cannot be brought about by mere human wisdom and skill, nor by the contemplation of the God of nature, and obedience to His voice in the works of creation and providence. This will never suffice to bring peace with God, with self, or with mankind, so long as the fearful and fatal disease of sin dwells and rules in man's nature; just as the placing of the best-tuned organ before a performer whose hands are paralysed, or whose ear is untrue, will prove insufficient to bring forth harmonious sounds. A power is required mighty enough to enlighten man's eyes, and to purify his heart, so as to enable him to

*Principle 6. Education should be of a mixed character.**

look at creation in the true light, and to understand the invisible things of God by the things that are visible. This power can only be found in the Gospel of the crucified, sin-atoning, and risen Son of God. It is very well that our children should, as it were, continuously bathe in the rivers of creation, but they must at the same time bathe in the ocean of Divine truth—the Scriptures, by which the Gospel of the grace of God is communicated, and the Spirit of God convinces and converts the soul. Thus, to the voice of nature will be added the voice of revelation. The Word will be received because written by Him, and what is written will, where the education is successful, be unhesitatingly acted on. But the direction given to moral training will depend as much on the system of education as on the religious principles of the educator.

* In her summary of the principles of Pestalozzi, Miss Mayo gives this a distinct place, but it is merely an application of the principle that education should be complete, and might be thus fully stated—that, as the faculties of children are various, and the ends to be accomplished equally various, as perfection of character can only be secured and the business of life accomplished by the vigour and activity of the various faculties of the human being, education should be of a mixed character. In accordance with this, Miss Mayo constantly maintained that public education should be united with private, and the social with the domestic spirit; that education should be practical as well as preceptive, illustrated by the teacher as well as enforced upon the child, and applied both individually and collectively; that it should also be practical, by drawing much of its means of development from the actual circumstances of life, and directing the faculties according to the child's station in life; that the methods of teaching and governing should not be confined to

*Principle 7.—Education should be gradual and progressive.** Dr. Mayo states and explains this principle as follows:—*Development should be essen-*

one artificial something or aggregation of somethings called a system; and that teachers should not push any rule or principle to excess, or use it when not applicable. Thus, because it is recommended to exercise the minds of children on visible objects from their suitableness to the first stage of children, it is not to be supposed that everything is to be taught by objects, or the children confined to such subjects about which discoveries can be made by the exercise of their senses. Miss Mayo further held that the subjects of instruction should be sufficiently numerous to secure the exercise of all the intellectual faculties, furnish with general information, and fit for all the duties of society; that objects should be presented, both natural and artificial, with their qualities, circumstances of place, number, &c., their history, actions, uses, &c., in order to cultivate observation; that past events, texts, hymns, tables, facts in geography, and definitions and rules in grammar, &c., should be learnt, in order to cultivate memory; that the judgment and reasoning powers should be exercised in their earliest stages on the objects, actions, qualities, and operations which the children daily examine; that direct instruction should be followed by study, and the instructor converted into an examiner and supplementer of the child's acquisitions; that children should be carried rapidly over some subjects of instruction in order to develop power and energy, and slowly over others in order to give habits of minute investigation.

* This principle arises out of the organic character of education; all that is organic grows, *i.e.* naturally and progressively unfolds itself; therefore education should be gradual and progressive. It is also essentially founded on the fact

tially progressive.—The *sentiments* should be gradually led to take a higher direction and a wider range. The *motives* of well-doing must be by degrees elevated and purified in their character; the *duty* which was discharged at first in obedience to an earthly father must be set forth as the requirement of a heavenly one; the *charities of life* must be exercised towards those in immediate contact; by degrees an interest may be cultivated in operations embracing a wider or distant sphere of usefulness.*

that all the faculties of children, physical, intellectual, and moral, are gradually and progressively exercised in strength and ability; and we must follow the progress of nature. The principle might be fully stated thus,—That as the mind of children, like their bodies, develop and come to maturity step by step, education in order to follow nature should be progressive and gradual, keeping pace with the development of the faculties; and should be united in its parts like a chain whose links form a continuous series without a gap. It is beautiful to observe how perfectly this principle is in harmony with all around. Gradual progress marks all that we see both in nature and society. It is worthy of remark that the idea of graduating education is not new. Paulus Aeginetas, a Greek of the sixth or seventh century, laid down a graduated course of education founded on the laws of the periodic growth of children. This view, however, was first introduced in recent times, and practically carried out in the schoolroom by Pestalozzi.

* The progressive character of the Pestalozzian system may be applied in the progression (1) of ideas, (2) of instruction or study, (3) of the development of the faculties, (4) of the

“The cultivation of the higher intellectual faculties of judgment, reason, and taste is preceded by the careful development of just observation, clear intellectual conception, and accurate generalization. For this purpose real objects are presented to the examination of the younger pupils; the physical moral treatment of children, both as to the sphere and principles of conduct. These comprehensive sentences of Dr. Mayo refer to the last point, and take in a considerable part of the range of moral education in reference to its graduation. The moral feelings should not only take a higher direction in rising to higher objects at last culminating in God, and a wider range in embracing the most distant and remote relations and duties, but there should be the graduation of a successive development and exercise. The moral nature of a child does not develop in all its parts at the same period. Some feelings are in operation much earlier than others, and consequently should be acted on first. Some are active and almost as vigorous in the child as in the full-grown man, as the desire of action, curiosity, sympathy, imitativeness, faith, and love of approbation, whilst caution, a sense of self-importance, reverence, the sense of the beautiful, and conscience are of a later development. In the moral treatment of children at different stages regard must be paid to this fact. In order to secure the permanent possession of right feelings and the practice of right conduct; to work the springs of moral character, and even to administer punishment justly and effectively, to check a disposition or subdue the will there must be much discriminating gradation of procedure. Take the following examples, and although these are mainly different means of moral training, yet both in lessons and in the general education of the children they will be found to succeed

senses are trained to accurate perception, full descriptions are given to call forth apprehension, and the understanding is gradually led to generalize and classify the notices it receives through them." Else-

each other, and thus form a succession, not to be altered, if not a true gradation. 1st. *Exhibit* right conduct and feeling; 2nd. *Express* right feelings and views; 3rd. *Inculcate* and explain right feelings and practices; 4th. *Lead* the children to indulge in right feelings and to practise right conduct. The first is the simplest, and appeals to sympathy and imitativeness; the second, to faith and habit, which are both strong in children; the third, to the understanding and the relations of things which call forth the judgment; and the fourth, to various principles of action under the influence of the will—the most advanced.

Nothing exhibits gradation more clearly than the principles of action by which children are influenced; a wise teacher will, therefore, be careful to follow their development. Nature first develops the mechanical, consisting of instinct and habit, and for a time these predominate. No real motives to action exist, and the judicious mother or teacher throws herself upon the power of habit, and trusts to instinct and thus carries forward the work of education. Next are developed the animal principles of action, of which animal impulse within constituting self, and man without, are the motives, and the child is stimulated accordingly. And lastly, appear the rational principles of action in which the noblest elements of man's nature are drawn out towards the supreme Being, whose will and pleasure become the motive. The child is led to act as an intelligent and moral being, dictated to by reason and conscience, deferring to truth and the will of God. It is consequently at this period that appeals are made to the reason, that the sense of duty is called forth, and

where Dr. Mayo remarks, that "physical observation precedes physical conception, and physical conceptions lead to metaphysical abstractions by the intermediate link of general conceptions; and in every branch of instruction a correct observation of facts or data is placed before the process of judg-

God made the supreme object of regard. The child is now prepared to act under the test of all government—self-government; and thus he arrives at the crowning-point of moral education. For this, the previous stages prepared; towards this, the parent or teacher of intelligence continually looks forward; and at this the child arrives only when properly handled. But how many are all their lives the mere creatures of habit, and of the influences of those instincts that we have in common with the lower animals. And as to discipline, the practice of increasing punishments in duration, in degree, or in kind until the disposition is eradicated or the will subdued is a painful example in point.

In early infancy the mental constitution presents the rudiments, as it were, of those powers which characterize the human being in mature age. The several faculties of emotion and thought are all essentially the same in the child as in the man, but some of them are developed much sooner than others. Observation or perception is the first that opens in the human mind; it makes its appearance before conception; and conception before judgment. The association of ideas takes place sooner than memory; and afterwards comes to the aid of the latter faculty. Judgment respecting ideas of objects and actions appears sooner than that of moral ideas. Ideality, simple abstraction, and intuitive reason are developed at a comparatively early period, whereas complex abstraction and abstract reason are the latest in the develop-

ing or reasoning upon them. Realities should also precede signs ; and of signs, those which are significant by nature take the priority of those which are significant by compact."

Intellectual exercises, which are given at the usual lessons, should be so graduated, that one step would prepare for the next, and supply the pupils with a reason for taking it. "But," says Dr. Mayo, "in the ordinary methods of teaching, the course of instruction is founded on *abstract scientific considerations of the knowledge to be conveyed*. In the ment of the human mind. Again, observation, simple memory, and the dramatic element of imagination are almost as vigorous in the child as they are in the full-grown man, whilst philosophical memory, imagination, abstraction, and reason do not gain vigour before a comparatively mature state of mind.

Even in the same faculty its various functions are not performed equally early. In *judgment*, for example, the sense of *resemblance* with respect to the visible and tangible forms of things comes before the power of discriminating *differences* ; and hence children apply the names of individuals to species, and the names of species to genera, long before they analyze and classify. Again, differences are noticed before the sense of *ratio* is in any degree of activity—that sense which is chiefly concerned with the circumstances, sequence, or order of proportion and dependence. Further, the transition is imperceptible and gradual from the discernment of resemblance to the more active perception of analogy, which relates to what is more abstruse, involving identity of principle or mode of action or construction as well as sameness in use or final cause.

Pestalozzian method, the course is arranged on *psychological principles, derived from the consideration of the nature and position of the beings to be instructed*. In every branch of study the *point de depart* is sought in the actual experience of the child ; and from that point where he intellectually is, he is progressively led to that point where the instructor wishes him to be. Thus he proceeds from the *known* to the *unknown*, by a process that connects the latter with the former ; and, instead of being abruptly placed in contact with the abstract elements of a science, he is led by a course of analytical investigations of the knowledge actually possessed, to form for himself those intellectual abstractions which are in general presented as the primary truths. Thus a *natural* development founded on *particulars*, varying in some circumstances, precedes and prepares for the *artificial* development, founded on *general*, invariable truth."*

* In the progress of study the child proceeds from the natural signs of looks and gestures to the conventional tones of the mother tongue,—from living sounds in language to dead characters in books, and from the actual reality in the object lesson to the signs of it printed in the description. Speech precedes reading, as reading is followed by writing. Objects precede pictures, which are used antecedently to maps, diagrams, and other artificial representations. The contemplation of deeds, whether of faith and love, or otherwise, goes before conceptions and the descriptions of them couched.

"A connected course in intellectual education, not only facilitates the acquisition of knowledge,

in terms and definitions. In arithmetic, the child proceeds from ideas of number in connexion with objects, to mental calculations, where he still comes face to face with numbers themselves, though not with the bodily, but with the mental eye. From these he passes to ciphering, where the numbers are seen through symbols. In like manner the child proceeds from examples and particular ideas to general descriptions, definitions, and rules, as in grammar and number; in natural phenomena, from the particular phenomenon occurring under the child's observation to the general law by which it is regulated; in form or geometry, from descriptions of particular solids to that of general resemblances, ending in abstract conceptions; in the study of the human heart, from observing the manifestations in himself and others, to reading the lives of great men, and from that to those of mankind in the pages of history. Even writing and reading are good examples of a gradual procedure. The teacher analyses these into their elements, teaches the latter in succession, and then combines them by a process of synthetic teaching. In writing taught after the method of Malhauser, and the Phonic method of teaching to read, practised in the schools of the Institution, we have additional specimens of a gradual procedure. But, perhaps, in the graduated course of instruction drawn up for the infant schools of this Institution there is the best specimen of a careful graduation of subjects of elementary instruction that has emanated from the school of Pestalozzi. In teaching "*Colour*," six steps are carefully followed.—1st, distinguishing colours; 2nd, naming colours; 3rd, distinguishing shades of colour; 4th, naming and arranging shades of colour; 5th, exercising the conceptive powers in describing colours and

but shows the relation in which different truths stand to each other."*

shades of colour; 6th, the judgment of colour in the formation of secondary colours, &c., their mixture, &c. In lessons on "*Form*," the 1st step is that of distinguishing regular forms; 2nd, the parts of forms; 3rd, names or phrases indicative of name; 4th, comparison of forms; 5th, solids of a regular character observed, named, described; 6th, classification of forms; 7th, with elder children, lines and angles as matters of observation, judgment, and reasoning; 8th, geometry. In lessons on *Sound* the first step is to distinguish common sound; the 2nd, to imitate the same; the 3rd, to distinguish and imitate musical sounds as to length; the 4th, as to pitch; 5th, as to volume; 6th, musical notation; 7th, combination of elements, with applications to singing, differing in degree of complexity; the 8th, vocal music. The ease and pleasure alike of teaching and learning, when graduation is thus practically carried out, may be witnessed in any Pestalozzian school. All the elementary subjects of instruction have been carefully graduated in our own schools, as may be seen by consulting the manuals of the Society. Simplification can only be carried too far, and continued too long, when the mind becomes so accustomed to receive knowledge divided into its most simple elements that it is not prepared to embrace complicated ideas, or to make those rapid strides in investigation and conclusion, which is one of the most important results of a sound education.

* In addition to these advantages of a progressive and connected method of proceeding, acquisition proceeds more steadily, the children are made happier, smiles take the place of sighs, the teacher proceeds with more ease, certainty, and satisfaction. ~~2nd, rote learning is avoided, that error of teachers, who allege that such and such subjects must be~~

Dr. Mayo adds in his introduction to *Lessons on Shells* :—" *Every age has its intellectual, as well as its moral claims,* and though the

learnt merely, as they cannot be understood; whereas by beginning a little lower, and by waiting a little until the faculties were further developed, they would substitute intelligence and pleasure for jargon, sighs, and disgust. The progress of a child both intellectually and morally is like ascending a ladder; when he attempts to take two steps at a time he runs the risk of falling to the bottom. Hence his footing should always be made firm on one step before he is led to the next. Proceeding thus he may ultimately be led to any height. The beauty as well as the benefit of the progressive perfection of the human soul is very great, and the benevolent designs of the Supreme Being therein conspicuous. He does all things well. Here nature acts slowly, gradually, and well, without crowding, or hurrying.

Again, *progressive* advancement stands in opposition to the haste and blind groping of many teachers without system. It endeavours to find the proper point for commencing, and to proceed in a slow and gradual, but uninterrupted course, from one point to another, always waiting until the first should have a certain degree of distinctness and fixedness in the mind of the child, before entering upon the exhibition of the second. In fact, the intellectual exercises will thus be so graduated that one step prepares the way for the next, and prepares the pupil with a reason for taking it. The advantages of a right starting-point and regular gradation have been proved to be incalculable. Look at the application of this principle in changing the character of the instruction given both in the infant schools of the poor and the nurseries of the rich. For geometry, "form and size" are substituted; for arithmetic, "number;" for geography, "place;" for

stern discipline of early classical instruction may offer some advantages, still the hours devoted to the abstractions of grammar, and the puzzling out ideas which have no prototype in the child's mind through the dark mist of a language little akin to his maternal tongue, present very meagre food to that understanding they are supposed to strengthen. If the child must lisp in Latin, let him do so; let his first '*Gradus ad Parnassum*' be through the quagmires at its base; the few choice spirits that mount the summit may, perhaps, tread it with

mechanics, "weight," and so forth. Why? Because they are elementary, and appeal to the senses. The effect produced in older schools, if the principle be intelligently and thoroughly applied, would be still greater. Sensuous instruction would be admitted more largely. Isolated facts would be introduced before attempts are made at connected reasoning on them. Correct speaking would be attended to before correct grammar, which would also be deferred in its introduction. The judgments and reasonings of authors would not be forced on the mere memory. Generalities and abstractions, as put at the beginning of school books, would be placed at the end. Attempts at the cultivation of taste, especially in connexion with the imagination, would not be made until the pupil had attained greater intellectual stature. Instead of Euclid and Euler made easy for the children, we should wait until we had children strong enough and tall enough to reach the lofty niches of Euclid and Newton. There would be no precocious, unhealthy development. Let teachers deal with the faculties as they come to their hand, and they will find that they will ultimately be amply rewarded.

firmer step, and enjoy the prospect with keener relish ; but that step will not be the less firm, nor that relish the less keen, because a daily hour was abstracted for 'Lessons on Objects,' or 'Lessons on Shells.' Not only are the sciences so linked together that each gives each a double charm, but the faculties of the mind are so constituted, as that the vigour of each is promoted by the due development of the rest. And there is a harmony as truly existing in a properly educated mind, as in a well-formed and well-exercised body, though the harmony of the former may not be so easily discerned as that of the latter." Again, "*As every age has its intellectual claims, so also has every grade of talent.*" The schools of the highest reputation have generally been conducted too exclusively to the advantage of the superior class of minds. The fine porcelain has been beautifully moulded and delicately pencilled, but the coarser clay has been almost entirely neglected. Yet many a young man who will never shine in the Senate House or the schools, may yet pursue natural history with success, and find in such pursuits, improvement for his mind, a refuge from ennui, and a substitute for sensual pleasures. There is much truth, as well as benevolence, in a remark I once heard from an amiable coadjutor of Pestalozzi : 'Tout terrain est bon si l'on sait le cultiver.'

But there should not only be progressive develop-

ment of the faculties, but progressive instruction according with the gradually expanding nature of the children. "There is a certain order," says Dr. Mayo, "in which truths present themselves to the mind engaged in the original investigation of a subject, and when the subject has been investigated, a different arrangement is necessary for the lucid exposition of the truths discovered. These views have been most unhappily applied in the early stages of instruction. For although the artificial order may be best calculated to convey knowledge to minds already trained for its reception, by previous acquaintance with similar subjects, it is by no means suited to the opening faculties of children. Hence the disgust, in many cases insurmountable, which the first principles of a science inspire in their minds. This disgust, however, vanishes, if a preparatory course of instruction be arranged, having for its object the training the mind for the study of the science rather than the communicating the knowledge of it. In this preparatory course the order is determined by a consideration of the mind of the pupil ; it commences with what is already known to him, and proceeds to the proximate truth ; the more easy precedes the more difficult ; the individual prepares for the general truth ; the example for the rule."

In his introduction to the Cheam grammar, Dr. Mayo makes the following remarks, which, whilst

more immediately concerned with the teaching of language, further illustrate the principle of proceeding gradually with the young, whether in relation to knowledge or the development of the mind. Although they refer to the acquisition of the classics, they may also be turned to account in teaching the mother tongue.

“In spite of every indication which the youthful mind spontaneously gives, that it is led from the perception of particular truths to the conception of universal propositions, — that it must first see embodied in realities and clothed with circumstances the ideas which it is afterwards to recognise in their pure, abstract, intellectual form, — the prevailing practice is forcibly to drive a child of tender years through the generalities of grammar, unintelligible and uninteresting to him, till at last, in the course of their application in practice, the true order of thought is established in his mind, and he understands and appreciates his grammar through the knowledge which he derives from studying the language itself. The objections to this course are so obvious that it is not to be wondered at that a variety of plans of instruction should have been formed on principles diametrically opposite. By means of translation, oral or printed, free or literal, interlinear or interpaged, with various degrees of ingenuity, they have carried the self-complacent pupil along their easy declivities, cramming him

with an ill-digested knowledge of the literature of the language, and leaving the grammar to ‘toil after them in vain,’ a kind of ‘*pœna pede claudo.*’ But this is a mistake. To attain the end we have in view, and rightly to fix the knowledge we would communicate, we must attach the same importance to grammatical instruction that has been assigned to it in our ancient institutions; accurate knowledge and ready application of its forms and principles must be made the predominant feature, the never-forgotten aim of early lessons: ‘*Hinc spes roboris.*’ But these forms and principles should first be traced in analyzing passages of ancient authors, selected for the purpose of exhibiting them. In this manner the value and use of grammatical knowledge will be felt in the acquiring it, and a much clearer conception of its principles will be formed. But the committing to memory the result of this observation, as it is presented in the grammar itself, must follow step by step, and not be reserved altogether for a later period. It is not necessary that each particular form should be seen in some selected passage before it is read in the grammar; the end is answered if some prominent points are thus presented.

“The grammar may be referred to as supplying a complete as well as a systematic arrangement. In such a course as this, previous observation and analysis gives life to the grammar, and the grammar

committed to memory gives solidity, permanency, and order to the knowledge practically acquired. Thus the positive knowledge sought is effectually attained, and the faculties of the pupil are beneficially exercised in attaining it. His mind is consequently improved in a higher degree, and more real progress is made than would have been the case, *ceteris paribus*, under either of the rival modes of instruction.

"The principle here laid down is susceptible of various modifications in its practical application, and it has, in fact, been applied in various manners in the Institution of Pestalozzi himself and elsewhere. All that, strictly speaking, I contend for is the principle itself—the mode of reducing it to practice I leave to the discretion of the teacher."

*Principle 8.—Education ought to be free and natural, instead of being cramped, confined, and servile.**

* Pestalozzi laid it down as a principle that education should be addressed and adapted to individual character and not to children in a mass—that it ought to be "free and natural, instead of being cramped, confined, servile," running in a groove or channel, and attempting to mould all minds into one general form. He held that the mind should not only have sufficient liberty to manifest decidedly its individual character, but that the cultivation or treatment should, as far as possible, be adapted to the individual character. For this purpose he required close attention and constant reference to be paid by the teacher to the peculiarities of every child,

and of each sex, as well as to the characteristics of the people among whom he lived, in order that he might acquire the development and qualifications necessary for the situation to which the Creator destined him, and be prepared to labour successfully for those among whom he was placed by his birth.

It is well, of course, to view children in their points of resemblance, in order to adapt their treatment and teaching to the general principles of their nature; but their education cannot be carried on effectually without noticing their individual distinctiveness. It is here that the study of character is necessary, and helps to give certainty to all our proceedings. By this study the mental chemist (so to speak) can tell the constituents of his soil, as well as the agricultural chemist, and like him point out what is redundant and what is defective, and act accordingly. The "sympathy of numbers," though a truth, is but a partial one, and when used indiscriminately belongs to that species of quackery that would apply a special remedy as a universal recipe. The influence of numbers united with the spirit that sanctifies a virtuous home is good, but it is a principle that applies more to moral than intellectual education. True, "the sympathy of numbers" may be brought into operation at gallery instruction, and a teacher can thus give instruction to a large number at once, and thereby economize teaching power. But is this education? and is the teaching as efficient as if the gallery were broken up into two or three classes? Is not the individuality of the children sunk in the mass, and all measured by the same rule?

Pestalozzi never would sanction the teaching or training of children in large numbers on one uniform plan. The class was his standard, and even there he would suit and adapt himself to the particular dispositions and characters of the children. Like the principles already taken up, this has its

origin in the laws of the human mind of which Pestalozzi was a diligent student, and on which his whole system is founded. It is an obvious, a recognised, and a well-established fact in mental science, confirmed by daily observation and experience, that the different faculties of the human soul are possessed of very different degrees of endowment or natural force in different individuals, and that in the same individual they vary in their degree of power, some being weak and some strong ; whilst others occupy a medium position.

It is this which gives rise to those peculiarities by which every mind is marked, and to the endless varieties in the character and tastes of individuals, and consequently in their pursuits. It is this which gives rise to what is termed the predisposition, bent, or bias of the individual, and constitutes what has been called his idiosyncrasies.

The diversities of character are twofold, intellectual and moral ; the one giving rise to ability, the other to dispositions and habits ; the one forming intellectual, the other moral character. These diversities must be met and treated with discrimination and care. In one child *memory* takes the lead, and, as it were, throws into the shade all the other powers of the mind. Such an one must first have collected everything in his storehouse before he can elaborate it. In another, almost everything comes through *imagination*. He evinces little or no reason, but carefully marks such narratives as come under his notice, and makes whatever in them pleases him his own. He writes correct orthography, and yet he does not know a single orthographical rule. Another pursues quite an opposite course. His *judgment* approves, and it is only what he thus approves that he treasures up. His magazine, if we may so speak, is poorer ; but his store has been selected after his own fashion. All his mental possessions are carefully selected and laboriously acquired. Some excel in the exercise of the reflective powers, by which they ascertain pre-

mises, deduce inferences and draw conclusions. In a word, they have the logical faculty, which is always tracing to causes or consequences. Then there is the mechanical genius, who, though he seems to effect little or nothing in the school, will probably become as an artizan, much more useful than his neighbour who, though he is of much quicker parts, will probably make a worse workman, because he does not possess sufficient patience and steadiness for labours of a mechanical kind. Again, there is the embryo artist who sketches all sorts of things in his book or on the walls, and among the rest a baby brother or sister's face. In such a one we see a future "Landseer," or a "West." Who would attempt to teach and deal with all these diversities of intellectual character in the same way, if they are to be improved ?

From the neglect or violation of this important principle much time is wasted in school by painful and fruitless efforts to pursue courses for which nature has not qualified the pupil. Let the hours spent in music by those who have no ear—upon drawing, by those who might almost be said to have no eye—upon languages by those who never afterwards speak any but their mother-tongue, be added together, year after year, and an aggregate of wasted time will present itself sufficient to alarm those who are sensible of its value, and of the awful responsibility of using it aright.

As to moral character or dispositions these diversities are very numerous. In the boy who always manages to be the driver of what he calls his horses, or the girl who is the directress at games and the patroness and guide of the younger ones, the love of power is at work. Again, a child who separates from companions, and is himself found musing so often, with a smile now and then playing over the face, is imaginative and solitary, living in his own land of shadows and dreams. One child is timid and needs encouragement ;

another is pert and bold, and requires to be repressed. One child is prone to pleasure, another to carelessness, and a third to presumption. One can be ruled only by fear, while another must be guided only by love. Further, moral diversities also exhibit an unvarying combination of certain definite virtues with certain definite vices. One is open-hearted and generous, but self-willed, headstrong, and forward—another is quiet and patient, but reserved, sulky, and revengeful—a third is gentle and amiable, but with a morbid sensibility that will lead to a thousand future wounds—a fourth is bold and fearless, but proud and domineering.

Religiously, the same differences exist, following the same variety of temperament. What may be the primal cause of these differences, whether wholly in natural constitution, or wholly in early influences, or partly in both, is a speculation into which we have no occasion to enter. We take their existence as a confessed fact, and we contend that it demands, as essential to an efficient education, a corresponding personal influence which shall discriminate in each case its particular dangers and deficiencies, and be suited to the wants of each pupil. It is certain that a mode of treatment effectual for one would be ruinous for another, and the moral medicine of one be the moral poison of another. Each pupil must be dealt with under a common classification, with such modifications as an individual influence over each and all can alone render possible. To stretch them all on one Procrustean bed by submitting them to one indiscriminate treatment is as rude a barbarism in the art of education as can easily be imagined. To one, the terrors of the Lord; to another, the gentleness of the Saviour, must be exhibited, as it is infallibly declared by God himself: "Of some have compassion, making a difference, and others save with fear, pulling them out of the fire, hating even the garments spotted by the flesh."

*Principle 9.—Education should be based on intuition; and particularly the right basis of elementary instruction Pestalozzi maintained to be intuition.**

In both instruction and discipline these diversities, inequalities, or modifications render the strictest attention on the part of the teacher necessary; and prove that simultaneous teaching and one mode of treatment either intellectually or morally is incompatible with the nature of the case.

* There is a constant use of this term in the present day, and round it is waged the fiercest of disputes both in the domain of philosophy and theology. We need not therefore wonder at its introduction into education and its being made the battle-ground of a system. For a clear understanding of the subject it will be necessary to look at the different applications of the term, to ascertain how the founder of our system applied it, and how far it has been admitted into our English Pestalozzianism.

In the common acceptance of the term, intuition denotes the act of the mind in perceiving truth without argument, testimony, or experience. The truth is arrived at by spontaneous suggestion, and the process is the same as instinct. In this sense intuitive and instinctive are equivalent. Thus, whenever any idea comes into play in the mind independently of any conscious effort, it is said to be intuitive. Intuition is higher in degree than instinct, arising from the more complex and higher character of the human spirit than that of the brute. In this sense all the faculties and powers, the passions and emotions of the human soul, are intuitive or instinctive. In what may be called the theological sense, because so frequently employed in connexion with some of the most im-

portant religious questions, intuition is used as synonymous with "consciousness," "common sense," "first principles," "self-evident truths," "natural knowledge," "fundamental reason," "light of reason," "light of conscience," "inward Divine light." In this sense it is not so much to any distinct mental faculty as to the mind itself, with all its powers, that reference is made. It exists as a mere capacity independent of experience for the first occasion of its action, and upon successive experiences for its gradual development and culture. It constitutes what is called the verifying power or faculty by which the truth or falsehood of whatever is presented to the mind can be decided. There are those who hold that by means of this power man is a sufficient guide to himself, and instead of needing to be enlightened by the Bible is qualified to sit in judgment on the Bible, and by "feeling, or inspiration, to see the truth at once and without any intervening medium," even that of Revelation. This is intuitional theology, which is German Rationalism transported to a higher temperature and more genial clime.

McCosh in his "Intuitions of the Mind," and Tate in his "Philosophy of Education," use the term in its more philosophical or higher educational sense. They apply the term to the various powers of the mind. The former writer says that the mind of man has a set of simple cognitive powers from which we obtain our primitive cognitions. It has also a set of reproductive powers by which it recalls the past in old forms produced by memory, or in new dispositions produced by imagination. The mind has also a power of comparison by which it perceives relations and forms judgments that are primitive or intuitional when simple and obvious. Hence it is that Tate speaks of intuitive observation, intuitive conception, intuitive memory, intuitive judgment, and intuitive reason, as distinct from the developed, conscious, and complex exercise of these various faculties, especially

when under the guidance of experience and the power of abstraction. But all this seems to indicate a step in the development of these several faculties rather than a distinct power.

In the note on pp. 39—41 is given what may be called the Pestalozzian acceptance of the term intuition. By it Pestalozzi understood the impression received by the external senses, communicated directly to the mind and by which it obtains the consciousness of any object. It is thus with regard to a large class of subjects synonymous with observation or perception in the English sense. When Pestalozzi speaks of intuitive perception he means sensuous perception as distinguished from the perception of the understanding or simple apprehension and judgment. But when Pestalozzi pursued the subject of education to a more advanced age in the child, he spoke likewise of mental, moral, and religious intuition; that is, of a perception of the understanding, the moral feelings, and the religious faculties of man. The ideas derived from those sources he regarded as distinct from all information derived from outward sources, inasmuch as they rest on internal consciousness. And he would base the intellectual, moral, and religious education of the child upon intuition equally with physical perception. It is here that this Evangelical Institution parts company with Pestalozzi, and would cordially join in the sentiments expressed by Miss Mayo at p. 55, and the note appended at p. 57. At the same time we know that his views were the least injurious of those held by Rationalists, and that his practice was far better than his principles. It was said that he attached little importance to testimony as one of the sources of our knowledge, and devoted too little attention to historical truth. But he never questioned Divine testimony as given in the sacred records, or neglected Bible teaching. Indeed, the great leader and expounder of the Bible and religious

Principle 10.—Education should be analytical; everything taught should be first reduced to its elements. It is an essential feature of the system of Pestalozzi that the teachers should analyze and find the simplest elements of the knowledge to be acquired, and then, leading the pupil to an acquaintance with these, enable him to build up by his own exertion the edifice of learning, and make it completely his own. Thus the first task of the Pestaloz-

truth at Yverdon was Neederer, an Evangelical clergyman of the Swiss Protestant Church.

It has also been said that "Pestalozzi was accustomed to observe that history was but a 'tissue of lies,' and forgot that it was necessary to occupy the pupil with man and with moral events as well as with nature and matter, if we wish to cultivate properly his moral powers and elevate him above the material world." But we believe that this was more from accident, and the circumstances of education at the time, than from premeditated choice. Deficiency and extravagance have been charged against ourselves in this place. Our system has been called the "no-telling system;" because we devote much attention to subjects of instruction that can be acquired by the children themselves by observation and reflection in connexion with a system of questioning. At one time books were thought to be ignored by this Institution, because from the character of the methods hitherto pursued, instruction was very largely given orally, and thus the minds of the pupils brought into greater activity.

It is rather in the extent of the operations of intuition than its existence that we disclaim, or at least doubt, Pestalozzi. With McCosh we "would as soon believe that there are no such agents as heat, chemical affinity, and electricity in phy-

zian instructor is analytic, that of the children synthetic; the latter begin at the lowest point and ultimately reach the highest—they begin with the elements, then combine them.*

sical nature as that there are no immediate perceptions and native-born convictions in this mind of ours." Alike the most accurate and the most practical view for the teacher to take of intuition, after admitting its existence, is, that it forms one of the original powers by which thought is created, one of the six sources from which, or channels through which knowledge reaches the mind. For an account of these channels see "Child and Book," under the head of "Origin of Ideas," pp. 94—97; where an accurate view of both the extent and the limits of this important faculty is given. The teacher ought to be able to make discriminating use of it in education and turn it to the highest account. He will avoid mistakes by ever remembering that in the spheres of morality and religion as well as that of the intellect intuition has only to do with ideas, and only indicates a means of acquisition, and that a limited one.

* If Pestalozzi had done no more for early education than reduce the different branches of knowledge to their elements, and thereby simplify the subjects, find a right starting-point for the child's career in the acquisition of knowledge, and secure a more intelligent attention and interest, he would have been a benefactor to the infantine class. What Baron Liebig has done for practical purposes, Pestalozzi did for practical education. And as the Russian Government conferred a diploma of honour on the Baron for the application of his theoretical knowledge of chemistry to the practical purposes of life, in like manner should the memory of Pestalozzi be embalmed for applying the theories of mental philosophy to the practice of the schoolroom. As is so com-

Such is Pestalozzianism as developed by Pestalozzi himself, and by individuals who gave to Pestalozzi his just meed of credit, as the originator of the system. The result of the application of these principles is clearly pointed out by Dr. Mayo :—
 “A pupil educated thus in harmony with his own nature feels an interest in his studies unknown to those who are subjected to an unnatural process ; and the genuine metaphysical experiences, which he insensibly treasures up, supply him with invaluable advantages for self-knowledge, and self-improvement in after life. Whatever application, distortion, or mutilation of these principles may be practically made by those who profess to adopt them, they must recommend themselves to the Christian parent, as a faithful reflection of the light of the Gospel : for *the method of Pestalozzi*

mon, however, in all first discoveries, his analysis was imperfect. Language, Number, and Form are not the whole of the elements of instruction. Indeed, Language, as understood by Pestalozzi, whilst a distinct and an important part, is not an element at all. As the term is used by him, it applies rather to objects to which language is made subsidiary. What, however, was but imperfectly done by Pestalozzi has been completed by the Home and Colonial School Society. And not only so, but these elements have been worked out into a graduated series of lessons, carrying the infant through all the stages of intuitive development, and bringing him up to the usual complex branches of instruction taught in the juvenile school.

is, in its essence, the application of Christianity to the business of education.”

We might extend our quotations by drawing upon writers of another class—educators who speak in Pestalozzian phrase, and evidently borrow from Pestalozzian sources, but have not acknowledged their obligations. But we forbear.

THE METHODS OF PESTALOZZI.

It remains only to make a few concluding remarks on the method of Pestalozzi. We have already mentioned the comprehensive view he took of education ; that he considered whatever God bestowed on man was a talent to be cultivated ; that he took nature as his guide, and commenced the work with those faculties which first appear, carefully watching the dawn of each power, carefully preserving a due equipoise between them, endeavouring thus to carry on an harmonious and progressive development. We will, however, in concluding, enter a little more into detail. And first as to instruction :—

The object of Pestalozzi was to collect all the elementary means of developing the faculties by the most natural processes. The first materials are supplied by the impressions the child receives from the external world. The crowd of objects that present themselves to his observation, causes at first a real chaos in his mind, but, insensibly, the

impressions produced by the things continually before him acquire more distinctness ; next arises the desire of communicating to others what he experiences himself ; the organ of speech is not then long before it performs its office. With the assistance of language, sensations acquire day by day more precision. But all this forms only the basis of the column. Impressions thus received, prepare the way for higher mental exercises. Soon the presence of the object is not necessary to call forth the idea,—by a simple act of his will, his imagination reproduces it—his memory recalls it—he sees it with the eyes of his mind—he can retrace its form—determine its proportions ; he compares, judges, reasons ; and the little being, so lately inferior to the brutes in intelligence, manifests the distinguishing characteristics of man. Such is the course of nature ; Pestalozzi took it as his guide ; he was convinced from what he observed, first, that the intellectual faculties of a child only require to be developed carefully, gradually, and steadily, to elevate him to the highest point to which man can attain ; and, secondly, that the little success hitherto obtained in education ought to be attributed to the weakness and incoherence of the foundation upon which different systems had been based ; and especially to the little care taken to give to the impressions received in infancy a direction conformable to the indications furnished by nature.

Pestalozzi sought to discover the most simple means of giving the child this direction, so that the teaching of art might harmonize and co-operate with that of nature.

After a long series of observations and experiments, he came to the conclusion, that the first distinct ideas called out in a child by exterior objects, were the result of observations that he made naturally on their *form* and their *number*, combined with the knowledge he had acquired of their *name*. In consequence, he proposed an elementary course of instruction consisting of three branches. The first embraced the intuitive perception of the objects of nature and art by which the child is surrounded, with the acquisition of their names, and to this he gave the name of *language*. The second embraced intuitive instruction in *number*. The third, intuitive instruction with respect to Form and Dimensions.

1. *Language*.—With respect to the first branch of instruction, Pestalozzi arranged a course comprising five steps.

In the *first step*, the child is taught to distinguish the sounds of language, and imitate them. It contained a complete series of articulate sounds, which the child is to repeat sometimes slowly, sometimes quickly, but always distinctly ; the mother sometimes singing them, varying the tone and expression.

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In the *second step*, the child learns to name everything brought under his notice, without any order or arrangement, taking advantage of whatever creates a want, or excites curiosity. From naming things he proceeds to distinguish and to learn how to speak of their various properties, and thus gradually acquires an abundant supply of words, with which he also connects clear ideas.

The object in the *third step* is to lead the child to fix his attention successively on whatever in any object naturally calls out his observation. He will learn to distinguish and name the different parts, and most striking qualities of an animal, a plant, or a stone, and thus the habit is formed of observing with intelligence everything around him, and the power acquired of expressing himself correctly with respect to them.

At the *fourth step*, it is proposed to lead the child to perceive the points of difference in the objects of which he has observed the principal characteristics; thus, that the horse is a quadruped, with an undivided hoof; the ox, a quadruped with a cloven hoof; that the willow is a tree with pointed leaves; the oak a tree with jagged leaves, &c.

The *fifth step*—the differences, observed in the preceding steps become the basis of the instruction proposed in this. The child is to be exercised in arranging in one row all objects of a similar nature.

These lessons not only embrace a knowledge of qualities, but are extended to actions and uses; and this leads to a large sphere of instruction,—to the terms used in arts, and in natural history, in trades and occupations. With respect to actions, the child may be exercised in determining their object, utility, danger, &c.; he may be led to observe the following or other circumstances, and to express himself with relation to them, *viz.*: What usually performs such an action? When is it done? Where is it done? Why is it done? How is it done? What good is it? What harm?

In this way the child may be exercised in acquiring positive ideas of a number of things that might otherwise strike his eyes, but not arouse his intelligence. One benefit arising from such instruction is the learning to associate the name with the thing signified, and the name calls up the idea of what it stands for. In this way the habit of viewing the material world with intelligence is cultivated, excited, and this combined with the power of correct and ready expression. A great difficulty, and one that impedes every instant those engaged in teaching the children of the poorer classes, is that of making themselves understood. Things, even the most simple, require long definitions, and then, after all, fail to make the matter intelligible to the pupil, who, in fact, has no just idea of the true meaning of terms in which they are

expressed. Further, he is prepared to enter upon the abstractions and generalizations of grammar; for particular facts and truths lead to the conception of general propositions. "The general ideas which, in the science of grammar, are presented as abstractions, he has seen embodied in realities, and clothed with circumstances: his course has been from the concrete to the abstract, from the particular to the general, from the example to the rule; and this is the natural course." Pestalozzi addresses his instructions in the first rudiments of language to mothers, with whom should commence the task of cultivating the faculty of speech, and calls upon them most earnestly and affectionately to do their duty fully by their offspring. Our trained teachers, however, often conduct this subject efficiently upon the models set in our manuals of instruction. At this elementary stage of his course, the teaching of Pestalozzi was chiefly oral and catechetical, illustrated as much as possible by natural objects and by demonstration. Books were not resorted to till the mind of the child was in a state of healthy activity, awakened to a lively interest in truth, and arriving at it by inductive processes. As the higher faculties unfolded, the subjects presented were such as promoted their exercise and improvement. The instruction given had always a reference to the mind of the child: it was not the value of the acquisition to be made which was so much to be considered, as its

effect in developing and strengthening the innate powers.*

* "A want of order and arrangement in the original lessons on objects has been alleged as a blemish; exercises so miscellaneous in their character, so devoid of systematic arrangement, were regarded as essentially defective as means of intellectual development. Upon these grounds the miscellaneous object-lessons were abandoned even in the school of Pestalozzi, the master who conducted the class substituting a course on the parts and functions of the bodily frame. But this was a mistake; the desultory character attaching to them in their original form is corrected in our English schools by making a previous selection of subjects and presenting them in the class-room. In point of fact their miscellaneous character is a studied feature, as better suited to the intellectual state of the pupils. Their first steps should be the examination of objects as nature presents them, or, rather, as they see them in nature; that is, either as insulated or associated only by accidental connexion. When ideas are formed and correct expressions familiarized, the business of classification commences, the lessons assume a more scientific character, and the pupils are prepared to enter on the province of natural history or any other natural science. Besides, as they are intended to be preparatory to instruction in natural history in all its departments, they gradually assume a more scientific character, and thus a feeling of progress is sustained in the pupil's mind. It has been found, indeed, by long experience, that no lessons produce more continued interest, or more enlarge the minds of children, than those on objects. The training which lessons on objects will have supplied for commencing easy lessons on shells or any other branch of natural history will consist principally in the improved faculty

2. *Number*.—The second elementary means by which Pestalozzi sought the development of the mental faculties, was *number*. This at first he treated as a process of intuition, requiring that before the abstract idea was presented to the child, he should perceive number connected with objects. Thus, the parts of his body may be used to give this idea, also stones, nuts, beads, &c. The instructor says to the child (not, Here is one), but, Here is one stone, one nut, &c. ; and adding another, Here are two stones, two nuts, &c. When the child has thus been exercised in distinguishing and naming one, two, three—the different number of the objects presented—he will soon have an intuitive perception, that the terms one, two, three, are always the same, whilst the objects to which they are applied vary ; he will thus be prepared to separate the idea of number from that of the thing, and to ascend to the abstract idea. When he has a correct idea of the numbers up to ten, he is ready to carry on different combination of these numbers. By practical examples he learns to form rules for himself ; he works his own way, acquiring power, vigour, and readiness at each advance : “ he is not led hoodwinked through the

of observing natural features, in the possession and command of a small vocabulary of scientific terms, in the habit of classification, and in the practice of giving a written summary of the knowledge acquired.”—*Dr. Mayo*.

intricacies of arithmetic,” but understands what he is about, first becoming familiar with elements, and then enjoying the pleasure of finding the results of their various combinations. The whole is a reasonable exercise ; he sees truth in all its processes, and his mind is trained to value intellectual as well as moral truth. There is a harmony between the different branches of his education which is *felt*. Pestalozzi, in his course of arithmetic, excluded ciphers until the idea of numbers was perfectly understood, and the children had practice in the common operations mentally. The main object of his instruction was the development of the mental powers ; and this he accomplished with so much success, that the ability his pupils displayed in mental arithmetic was one of the chief means of attracting the public attention to his experiment.*

* “The teaching of number at the earliest stages does not propose to explain processes, but to unfold principles. The pupil is not taught to comprehend a rule, but to dispense with it, or form it for himself. The path along which he is led may be longer than the usual route, but then it is in broad day-light ; he is more independent of his guide, and derives more health and vigour from the exercise. Were the true ends of intellectual education more clearly apprehended, the means of prosecuting it would be more justly appreciated. While the question *cui bono* ? so judicious in itself, is answered by a sordid reference to mere money-getting, or by a narrow-minded consideration of professional advancement, every method of instruction that proposes to itself a more

3. Form.—The *third* branch of Pestalozzi's elementary instruction embraced Form and its relations. It was similarly treated; intuition was the basis of future acquisitions in knowledge.* The

exalted, though less obvious utility, will be ridiculed as visionary, or neglected as unprofitable. But when the true end of intellectual education shall be admitted to be, first, the attainment of mental power, and then the application of it to practical and scientific purposes, that plan of early instruction which dwells long on first principles, and does not haste to make learned, will be acknowledged as the most economical, because the most effectual. Experience will show, as indeed it has already shown, that while superficial teaching may prepare for the mere routine of daily business, whensoever a question, not anticipated in the manual, occurs, none but the pupil whose faculties have been exercised in the investigation of truth, who is the master, not the slave of rules, will solve the unexpected difficulty, by a novel application of the principles of the science."—*Dr. Mayo*.

* The teaching of these elementary subjects has a history. For a time intuition was not only the basis but the superstructure, and in this we have exhibited the original and progressive character of the system of the great educator. We shall let Dr. Biber tell the story. "As Pestalozzi was not aware of the existence of a mental intuition as clear and as certain as the intuition of the senses, he fell into the mistake not uncommon among reformers of all kinds, that in avoiding the one extreme of mere nominal knowledge conveyed by the usual systems, he ran into an opposite one by keeping the child to the visible representations of number and form on outward objects, long beyond that period when they are conceived in the intellect as mental realities or ideas in the true

pupil gains from objects the ideas upon which he afterwards carries on the processes of reasoning: he learns the data of the science from the examination of geometrical solids: he deduces truth himself from facts he perceives to be true; and thus he gradually acquires the power of mathematical reasoning. Here, again, he works for himself—all is clear and real to him; and if the true end of education is to form the man, it is surely more likely to be effected by treating him as the agent rather than as the passive recipient. Under this system, the child constructs his own edifice; his faculties are exercised in the investigation of truth, which is so presented that he arrives at it step by step, each advance preparing for the next. The great aim is the development of the precious germs, folded up within his mind, and which, with expansion, acquire health and vigour. A child under such a system will, it

mind's emancipation from the external world. The merit of having detected and pointed out this mistake is chiefly due to Niederer, who from the first moment struggled against the tendency of Pestalozzi to incrustate as it were, the mind in the perception of sense. The impulse which he gave, produced very soon a reform in the mathematical instruction of the establishment, and the pupils, after they had been allowed sufficient time by the aid of visible representations to acquire real ideas, were conducted to purely mental operations on the same subjects." This may account for some of the accusations brought against Pestalozzi, and at the same time form his vindication from these aspersions.

is true, acquire less positive knowledge, in a given number of years, than one who has had all communicated to him : but his knowledge will be his own ; and he will have gained a mental independence and power which will fit him for grappling with difficulties, and prepare him for whatever may be his position in life.

Under the head of form Pestalozzi ranked writing, drawing, and geometry. The basis of each of these he considered to be the intuitive perception of form and its dimensions. Drawing, he thought, ought to be a universal acquirement, because the faculty for it is possessed by all, and because it would prove the means of leading the child from vague perceptions to clear ideas. He also considered that the art of measuring ought to precede that of drawing ; that is, that the eye should be practised in determining figure and proportion, before the hand is employed to execute these perceptions. If a child, he observes, is called upon to imitate objects or representations of objects before he has acquired a distinct notion of their proportions, his instructions in the art of drawing will fail to produce upon his mental development that beneficial influence which alone renders it worth learning. Writing, he maintained, should not be taught before, but after drawing, and this also should be preceded by a previous proficiency in measuring lines ; for writing is, in fact, a sort of linear drawing, and that of fixed forms, from

which no arbitrary or fanciful deviations are permitted. He also contended that the practice of writing, when acquired previously to, and independently of drawing, spoilt the hand and cramps its freedom, by confining it to a few peculiar forms. Another reason in favour of drawing being taught first, was, he said, that by the previous acquirement of this art, the power of forming letters is greatly facilitated, and the time is saved which children lose in correcting bad habits contracted by the practice of bad writing.

The elements of geometry were included under the head of form, and Pestalozzian instructors have been as successful in this science as in that of number. We will extract from a Preface by Dr. Mayo to a work entitled "Lessons on Form," an account of the manner of treating this subject :—

In the choice and adoption of Form as a subject of instruction and a means of education, Pestalozzi exhibited as much sagacity as he did in seizing hold of Arithmetic and turning it to these purposes. "Bacon observes," says Dr. Mayo, "that a man really possesses only that knowledge, which he in some degree creates for himself. To apply to intellectual instruction the principle implied in these words was the aim of Pestalozzi. It is a principle admitting of various degrees, as well as modes of application, in the different branches of human knowledge ; but in no one can it be more extensively applied than in

geometry. That science is peculiarly the creation of the human mind, in which, independent of external nature, and complete in its own resources, it builds up the solid but airy fabric of its abstractions. It needs no laboratory to test its conclusions, no observatory to obtain data for its calculations; rendering aid to other sciences, it asks none for itself.

“Hence, that teacher will act most in conformity with the genuine character of the science, and consequently will render the study of it the most interesting and the most improving, who invites and trains his pupils to create the largest portion of it for themselves. In geometry, the master must not dogmatise, either in his own person or through the medium of his book; but, he must lead his pupils to observe, to determine, to demonstrate for themselves. In order to accomplish this, he must study the intellectual process in the acquisition of *original* mathematical knowledge; and having ascertained what are the conditions of successful investigation, he must so arrange his plan of instruction as that these conditions may be perfectly supplied. He cannot fail to perceive that the leading requisites are a clear apprehension of the subject-matter, and well-formed habits of mathematical reasoning. . . The master, led by these considerations, will, in directing the first labours of his pupils, consider it as his especial aim, to enable them to form clear apprehensions of the subject-matter of

geometry, and then to develop the power of mathematical reasoning. Aware that clearness of apprehension can take place only when the idea to be formed is proximate to some idea already clearly formed—when the step which the mind is required to take is really the next in succession to the step already taken, he will commence his instruction exactly at that point where his pupils already are, and in that manner which best accords with the measure of their development. As his pupils are unaccustomed to pure abstractions, he will not commence with abstract definitions. But supposing them, through the medium of ‘Lessons on Objects,’ to have had their attention directed to the forms which matter assumes, he will present in his first lessons a transition from the promiscuous assemblage of forms, to a particular group of them, the regular solids. In conformity with the plan pursued in ‘Lessons on Objects,’ the pupils will examine regular solids presented to them, state what they perceive; then, by a more close and attentive examination, directed by the master, discover and supply the deficiencies in their first perceptions, and afford him an occasion for connecting their new ideas with adequate technical expressions.

“The master’s next aim is to cultivate the power of abstract mathematical reasoning. With a view to this end, he may advantageously avail himself of the knowledge obtained by the pupils from the

solids in the manner above described. Here, then, he will lead them to deduce the necessary consequences from the facts which they know to be true, and then invite them to examine the object, and see whether their reasoning has led to a correct result. Thus, if a child has ascertained and knows that two sides of different planes are requisite to form an edge, and that a certain solid (an octahedron) is bounded by eight triangular planes, he will be required to determine from these data the number of edges which that solid has. He will reason thus: Eight triangular faces have twenty-four sides; two sides form one edge; therefore, as many times as there are two sides in these twenty-four sides, so many edges that body must have,—that is, twelve edges. This result being obtained, the object is presented to him for examination, and he perceives by actual observation the truth of that conclusion at which he had arrived by abstract reasoning.

“These lessons form the basis of the introduction to geometry, and their results are, correct ideas of the subject-matter of the subsequent lessons, adequate expressions for these ideas, and sound knowledge of the definitions, which form the connecting link between physical and abstract truths.

“When the pupils have gone through the elementary course, they are found competent to demonstrate for themselves the greater part of the propositions in Euclid. These advantages arise from the appli-

cation of a principle generally neglected in early education, but deserving of consideration and universal adoption; namely, that every course of scientific instruction should be preceded by a preparatory course, arranged on psychological principles. First form a mind, then furnish it.”*

CONCLUSION.

It is not the object of this little work to enter fully into the details of Pestalozzi's system. A word, however, to objectors. Some, perhaps, will be ready to exclaim, We find but little new in this much-vaunted system; are not these the principles now generally acted upon? To some extent it is so, and this is what we have before stated—that Pestalozzianism has crept into and leavened the education of our land, though it is scarcely known whence the impetus proceeded which has given new life to our

* The “Lessons on Form,” by Mr. Charles Reiner, form a beautiful application of these principles. Respecting them Dr. Mayo further observes:—“It has been found in the actual use of these Lessons for a considerable period, that a larger average number of pupils are brought to study the mathematics with decided success, and that all pursue them in a superior manner. There is much less of mere mechanical committing to memory, of mere otiose admission and comprehension of demonstrations ready-made, and proportionably more of independent judgment and original reasoning. They not only learn mathematics, but they become mathematicians.”

institutions and our schools. It is this system which has taught us that reading, writing, and arithmetic do not constitute education—that instruction does not constitute education, nor even intellectual development itself—but that education, to use Pestalozzi's own expression, has to train the hand, the head, and the heart. This, too, is the system which has taught us that the use of signs should not precede the knowledge of the things signified; that we must place the ladder of knowledge on a firm basis in the child's mind, and proceed from the known to the unknown; a principle, indeed, which our Lord himself has recognised in His teaching by parables. Let us grant that Pestalozzi is not to be considered as the discoverer of new principles: yet has he, at least, as the propounder of a system, "the merit of one who says it so long, so loud, and so clearly, that he compels mankind to hear him; of one who is so deeply impressed with the importance of the discovery, that he will take no denial, but, at the risk of fortune and fame, pushes through all opposition, and is determined that what he thinks he has discovered shall not perish for want of a fair trial."

As Model Lessons are so much used in the training of teachers, and Miss Mayo's works mainly consist of these, the following description of her

lessons on shells is extracted from Dr. Mayo's preface to that work. "The end for which these lessons are laid before the public is not that they may serve as an instructive and entertaining volume to be placed in the hands of children, but in order that the subject may be more familiarly handled and more vividly conceived. They represent an imaginary group of pupils conversing and receiving instruction. The object my sister has proposed to herself is to place a volume in the teacher's hands which shall help him to re-act with his pupils the scenes that are here described. It is not a drama offered for perusal in the closet, but a manager's copy commended to the conductors of other theatres of education, to enable their lilliputian *corps dramatiques* to assume the same characters, play the same parts, and I will not say, 'fret their little hour upon the stage,' but enjoy the genuine delight of intellectual activity judiciously directed."