# MANUALS OF THE SCIENCE AND ART OF TEACHING. FIRST SERIES - NO. I. THE CULTIVATION OF THE SENSES

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FIRST SERIES—No. I.

THE

# CULTIVATION OF THE SENSES

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*These Manuals, with the exception of the last of each series, have been written, at the request of the Literature Committee of the National Society, by men distinguished at their several Universities, and possessed of large experience either as teachers or examiners. The last of each series, that on Class Teaching and that on Apparatus, is the work in each case of a Lecturer on Method at one of the larger Training Colleges.*

*The writers have endeavoured in each case to connect the practice of teaching with the fundamental principles on which it should rest, and to bear in mind the capacities and needs of the particular class of readers for which these Manuals are specially intended. The chapters have been broken up into short paragraphs, with conspicuous headings, and simplicity of language has been uniformly aimed at.*

*In order to obtain greater clearness and precision, and to save cross-references from one Manual to another, each subject has been treated independently, and is complete in itself. This independence of authorship has necessarily caused some repetition of matter, but it will be seen that this slight addition to the bulk of the whole has largely contributed to the definiteness and completeness of the separate parts.*

# THE CULTIVATION OF THE SENSES.

## CHAPTER I.

### INTRODUCTION.

HERE is a new-born infant lying in its cradle. The physical mechanism of its body is complete in all its parts and already in motion. It has organs of sight, hearing, touch, taste, and smell. It has nerves to convey the impressions made on those organs to its brain, and other nerves to direct its movements. But as yet, so far as knowledge of the external world is concerned, its mind is a perfect blank, like this sheet of paper was before it was printed on. Impressions are made upon its senses; images are formed on the retina of its open eyes, sounds are conveyed to its ears; bodies are in contact with its skin; odours reach its nostrils; flavours affect its tongue; but none of the impressions thus made are identified, and consequently are not known. And as it has no knowledge, so it has no will. Its movements are involuntary.

Here is the same child now grown into a man. He has the same organs of mind and body, no more and no less, as when he lay a helpless infant in the cradle; yet his senses are now so acute that he can perceive the slightest differences between the impressions made upon them; he recognises the objects by which he is surrounded; he is familiar *with their* qualities, their parts, their composition, and the

laws to which they are subject; his mind is stored with a wide variety of ideas, some simple and some complex; he is able to summon up these ideas at his will, and to combine them into new groups; and he can express his knowledge and the results of his mental operations in language. He is familiar with events that happened thousands of years ago, and with scenes and objects that he has never beheld. He is able to reason from what he has observed, and from what he has learned through the observations of others. He can devise or employ means to attain what might seem the most unattainable ends. He is, for instance, able to ascertain in his own study the composition of the sun; he can send a message that shall fly with instantaneous rapidity to the ends of the earth; he can control and utilise what might seem to be some of the most unmanageable forces of nature. Simultaneously with this acquisition of knowledge, he has gained the power of directing his conduct under the guidance of his reason; he has formed habits by which his various bodily and mental operations are performed with ease and regularity; his conduct has come largely under the influence of desires and affections; he has a sense of duty and responsibility; he has acquired a knowledge of a world beyond the range of his senses, and of the unseen Creator and Ruler of the universe, whom he worships and obeys, and with whom he holds constant communion.

The purpose of this little treatise will be to trace, in a simple way, the various ways by which the more important of these marvellous changes have been wrought, and to ascertain, in particular, the laws of mental development, with a view to their practical application in education. The teacher has not merely to communicate appropriate knowledge to his pupils, he has to educate them, *i.e.* to *bring out* their latent powers: and all his teaching must be regulated *by what children are.* He cannot impart any *new faculties to them,* or alter the order in which their *faculties are naturally* developed. Even the knowledge *which he communicates* to them they can only grasp and

assimilate in accordance with the immutable laws of the human mind. A little reflection will show the teacher that education does not stand alone in this respect, but that *all* human operations are similarly limited by law. The potter may seem to be able to give what shape he likes to the vessel which he is making, but even *he* is limited in the exercise of his will by the nature of the material in which he works. He cannot deal with clay as though it were wood or marble. He must have regard to the conditions of its plasticity, to its power of supporting its own weight while it is still soft and plastic, and to the effects which the heat of the furnace will have upon it. So the teacher may seem to be able to mould a child as he wills, but, as a matter of fact, he can mould it only in accordance with the laws of its being. He cannot give it a new nature. He can only utilise laws that already exist, and any violation or disregard of those laws is sure to be defeated and punished. He might as well try to make a rope out of sand, or carry water in a sieve, or keep an unsupported stone from falling, as try to successfully defeat the laws of a child's being. All such endeavours are doomed, from the nature of the case, to utter failure, and, in the case of education, must be productive of disastrous consequences. Many a child is ruined for life, and many children are robbed even of life itself, by the errors of parents and teachers that originate in ignorance of the laws of child-life.

**Value of some knowledge of human physiology and mental science to the teacher.**—It is clear, therefore, that the teacher should know something of the physical and mental laws of the child he is going to educate, not only that he may avoid running counter to nature, *i.e.* to God's intention as seen in natural laws, but *that he may have the momentum of nature on his side.* Systems and methods of education are perfect in exact proportion as they utilise natural laws; and it is the study of these laws which can alone create a science of education.

The teacher who disregards scientific principles must either blindly follow the practice of others, reproducing their methods, whether good or bad, without discrimination, or stumble along from one blunder to another until, at last, he chances on some method that proves to be successful because it *happens* to fall in with natural laws. When he ceases to reason upon the grounds of his practice, he degrades his profession into a mere mechanical craft. Education demands intelligence from the teacher at every stage of its conduct: intelligent observation of the facts of child-life, intelligent generalisations from them, intelligent consideration of the relative value of various kinds of knowledge, intelligent application of principles, and intelligent investigation of the causes of failure or success.

**Education an inductive science.**—Now the first wish of a young teacher, alive to the importance of studying the science of education, will probably be to procure a book in which the principles of the science of education are clearly set forth; but, while such a book may be of vast service to him, in showing him the kinds of facts which he should observe, and the conclusions which have been drawn from them by writers who have paid special attention to the subject, nothing can compensate the absence of original observation and reflection. Education is an inductive science, and the student of it must observe for himself and reflect for himself before he can attain to a thorough comprehension of its principles, or make a profitable application of them in his daily work. Just as the would-be botanist must not content himself with reading other people's descriptions of plants, or with the examination of diagrams and cut-and-dried specimens, but must go out into the woods and fields and lanes and observe plants for himself, as they live and grow, so must the teacher, who *would be conversant* with the science of education, make *himself thoroughly familiar*, at the first hand, with the facts *of child-life*. *He must* watch children when they are left to

themselves; he must note the ways in which they amuse themselves, remembering that *play* is to them their most earnest occupation; he must observe their primitive instincts, and how those instincts are naturally gratified; he must pay special heed to the ways in which they, consciously or unconsciously, become acquainted with the facts of the world around them; to their first endeavours at speech, as reflecting the operations that are passing through their minds; to their questions; to the order in which their faculties develope; and to the motives which exert the most powerful and healthy influence upon their conduct. He need not go far to find fitting objects for his study. Any little child into whose confidence he can, by love and sympathy, insinuate himself, will afford him infinite room for observation and reflection, which he will be able to turn to profitable account. When no other mind is at hand, let him observe and interrogate his own. Let him ask himself the means by which he came by this idea or that; how he remembers this, and why he has forgotten that; what faculties he employs in one operation, and what in another; why, in his own studies, one method of learning succeeds and another does not, and so on.

He will find that though this subject may seem hard and dry in a book, it is fraught with interest when the mind is kept constantly in contact with living facts. He will find, too, that though he may not see at once the practical application of the truths which he in this way acquires, they will gradually affect his teaching. In order to obtain the command over Nature, he will obey her. He may not discover any new method of teaching, although there is much more yet to be done than most people imagine to bring our systems of teaching into accord with natural laws; but he will inevitably teach more intelligently, whether he pursues judiciously selected *old* methods or strikes out *paths of his own,* for the simple reason that he knows what he is doing, *and why he is* doing it.