

if those modifications were not there. The latter influence the whole margin of our consciousness, even though their products, not being distinctly reproducible, do not directly figure at the focus of the field.

The teacher should draw a lesson from these facts. We are all too apt to measure the gains of our pupils by their proficiency in directly reproducing in a recitation or an examination such matters as they may have learned, and inarticulate power in them is something of which we always underestimate the value. The boy who tells us, "I know the answer, but I can't say what it is," we treat as practically identical with him who knows absolutely nothing about the answer at all. But this is a great mistake. It is but a small part of our experience in life that we are ever able articulately to recall. And yet the whole of it has had its influence in shaping our character and defining our tendencies to judge and act. Although the ready memory is a great blessing to its possessor, the vaguer memory of a subject, of having once had to do with it, of its neighborhood, and of where we may go to recover it again, constitutes in most men and women the chief fruit of their education. This is true even in professional education. The doctor, the lawyer, are seldom able to decide upon a case off-hand. They differ from other men only through the fact that they know how to get at the materials for decision in five minutes or half an hour: whereas the layman is unable to get at the materials at all, not knowing in what books and indexes to look or not understanding the technical terms.

Be patient, then, and sympathetic with the type of mind that cuts a poor figure in examinations. It may, in the long examination which life sets us, come out in the end in better shape than the glib and ready reproducer, its passions being deeper, its purposes more worthy, its combining power less commonplace, and its total mental output consequently more important.

Such are the chief points which it has seemed worth while for me to call to your notice under the head of memory. We can sum them up for practical purposes by saying that the art of remembering is the art of thinking; and by adding, with Dr. Pick, that, when we wish to fix a new thing in either our own mind or a pupil's, our conscious effort should not be so much to *impress* and *retain* it as to *connect* it with something else already there. The connecting *is* the thinking; and, if we attend clearly to the connection, the connected thing will certainly be likely to remain within recall.

I shall next ask you to consider the process by which we acquire new knowledge,--the process of 'Apperception,' as it is called, by which we receive and deal with new experiences, and revise our stock of ideas so as to form new or improved conceptions.

XIII. THE ACQUISITION OF IDEAS

The images of our past experiences, of whatever nature they may be, visual or verbal, blurred and dim, vivid and distinct, abstract or concrete, need not be memory images, in the strict sense of the word. That is, they need not rise before the mind in a marginal fringe or context of concomitant circumstances, which mean for us their *date*. They may be mere conceptions, floating pictures of an object, or of its type or class. In this undated condition, we call them products of 'imagination' or 'conception.' Imagination is the term commonly used where the object represented is thought of as an individual thing. Conception is the term where we think of it as a type or class. For our present purpose the distinction is not important; and I will permit myself to use either the word 'conception,' or the still vaguer word 'idea,' to designate the inner objects of contemplation, whether these be individual things, like 'the sun' or 'Julius Cæsar,' or classes of things, like 'animal kingdom,' or, finally, entirely abstract attributes, like 'rationality' or 'rectitude.'

The result of our education is to fill the mind little by little, as experiences accrete, with a stock of such ideas. In the illustration I used at our first meeting, of the child snatching the toy and getting slapped, the vestiges left by the first experience answered to so many ideas which he acquired thereby,--ideas that remained with him associated in a certain order, and from the last one of which the child eventually proceeded to act. The sciences of grammar and of logic are little more than attempts methodically to classify all such acquired ideas and to trace certain laws of relationship among them. The forms of relation between them, becoming

themselves in turn noticed by the mind, are treated as conceptions of a higher and more abstract order, as when we speak of a syllogistic relation' between propositions, or of four quantities making a 'proportion,' or of the 'inconsistency' of two conceptions, or the 'implication' of one in the other.

So you see that the process of education, taken in a large way, may be described as nothing but the process of acquiring ideas or conceptions, the best educated mind being the mind which has the largest stock of them, ready to meet the largest possible variety of the emergencies of life. The lack of education means only the failure to have acquired them, and the consequent liability to be 'floored' and 'rattled' in the vicissitudes of experience.

In all this process of acquiring conceptions, a certain instinctive order is followed. There is a native tendency to assimilate certain kinds of conception at one age, and other kinds of conception at a later age. During the first seven or eight years of childhood the mind is most interested in the sensible properties of material things. *Constructiveness* is the instinct most active; and by the incessant hammering and sawing, and dressing and undressing dolls, putting of things together and taking them apart, the child not only trains the muscles to co-ordinate action, but accumulates a store of physical conceptions which are the basis of his knowledge of the material world through life. Object-teaching and manual training wisely extend the sphere of this order of acquisition. Clay, wood, metals, and the various kinds of tools are made to contribute to the store. A youth brought up with a sufficiently broad basis of this kind is always at home in the world. He stands within the pale. He is acquainted with Nature, and Nature in a certain sense is acquainted with him. Whereas the youth brought up alone at home, with no acquaintance with anything but the printed page, is always afflicted with a certain remoteness from the material facts of life, and a correlative insecurity of consciousness which make of him a kind of alien on the earth in which he ought to feel himself perfectly at home.

I already said something of this in speaking of the constructive impulse, and I must not repeat myself. Moreover, you fully realize, I am sure, how important for life,--for the moral tone of life, quite apart from definite practical pursuits,--is this sense of readiness for emergencies which a man gains through early familiarity and acquaintance with the world of material things. To have grown up on a farm, to have haunted a carpenter's and blacksmith's shop, to have handled horses and cows and boats and guns, and to have ideas and abilities connected with such objects are an inestimable part of youthful acquisition. After adolescence it is rare to be able to get into familiar touch with any of these primitive things. The instinctive propensities have faded, and the habits are hard to acquire.

Accordingly, one of the best fruits of the 'child-study' movement has been to reinstate all these activities to their proper place in a sound system of education. *Feed* the growing human being, feed him with the sort of experience for which from year to year he shows a natural craving, and he will develop in adult life a sounder sort of mental tissue, even though he may seem to be 'wasting' a great deal of his growing time, in the eyes of those for whom the only channels of learning are books and verbally communicated information.

It is not till adolescence is reached that the mind grows able to take in the more abstract aspects of experience, the hidden similarities and distinctions between things, and especially their causal sequences. Rational knowledge of such things as mathematics, mechanics, chemistry, and biology, is now possible; and the acquisition of conceptions of this order form the next phase of education. Later still, not till adolescence is well advanced, does the mind awaken to a systematic interest in abstract human relations--moral relations, properly so called,--to sociological ideas and to metaphysical abstractions.

This general order of sequence is followed traditionally of course in the schoolroom. It is foreign to my purpose to do more than indicate that general psychological principle of the successive order of awakening of the faculties on which the whole thing rests. I have spoken of it already, apropos of the transitoriness of instincts. Just as many a youth has to go permanently without an adequate stock of conceptions of a certain order, because experiences of that order were not yielded at the time when new curiosity was most acute, so it will conversely happen that many another youth is spoiled for a certain subject of study (although he would

have enjoyed it well if led into it at a later age) through having had it thrust upon him so prematurely that disgust was created, and the bloom quite taken off from future trials. I think I have seen college students unfitted forever for 'philosophy' from having taken that study up a year too soon.

In all these later studies, verbal material is the vehicle by which the mind thinks. The abstract conceptions of physics and sociology may, it is true, be embodied in visual or other images of phenomena, but they need not be so; and the truth remains that, after adolescence has begun, "words, words, words," must constitute a large part, and an always larger part as life advances, of what the human being has to learn. This is so even in the natural sciences, so far as these are causal and rational, and not merely confined to description. So I go back to what I said awhile ago apropos of verbal memorizing. The more accurately words are learned, the better, if only the teacher make sure that what they signify is also understood. It is the failure of this latter condition, in so much of the old-fashioned recitation, that has caused that reaction against 'parrot-like reproduction' that we are so familiar with to-day. A friend of mine, visiting a school, was asked to examine a young class in geography. Glancing, at the book, she said: "Suppose you should dig a hole in the ground, hundreds of feet deep, how should you find it at the bottom,--warmer or colder than on top?" None of the class replying, the teacher said: "I'm sure they know, but I think you don't ask the question quite rightly. Let me try." So, taking the book, she asked: "In what condition is the interior of the globe?" and received the immediate answer from half the class at once: "The interior of the globe is in a condition of *igneous fusion*." Better exclusive object-teaching than such verbal recitations as that; and yet verbal reproduction, intelligently connected with more objective work, must always play a leading, and surely *the* leading, part in education. Our modern reformers, in their books, write too exclusively of the earliest years of the pupil. These lend themselves better to explicit treatment; and I myself, in dwelling so much upon the native impulses, and object-teaching, and anecdotes, and all that, have paid my tribute to the line of least resistance in describing. Yet away back in childhood we find the beginnings of purely intellectual curiosity, and the intelligence of abstract terms. The object-teaching is mainly to *launch* the pupils, with some concrete conceptions of the facts concerned, upon the more abstract ideas.

To hear some authorities on teaching, however, you would suppose that geography not only began, but ended with the school-yard and neighboring hill, that physics was one endless round of repeating the same sort of tedious weighing and measuring operation: whereas a very few examples are usually sufficient to set the imagination free on genuine lines, and then what the mind craves is more rapid, general, and abstract treatment. I heard a lady say that she had taken her child to the kindergarten, "but he is so bright that he saw through it immediately." Too many school children 'see' as immediately 'through' the namby-pamby attempts of the softer pedagogy to lubricate things for them, and make them interesting. Even they can enjoy abstractions, provided they be of the proper order; and it is a poor compliment to their rational appetite to think that anecdotes about little Tommies and little Jennies are the only kind of things their minds can digest.

But here, as elsewhere, it is a matter of more or less; and, in the last resort, the teacher's own tact is the only thing that can bring out the right effect. The great difficulty with abstractions is that of knowing just what meaning the pupil attaches to the terms he uses. The words may sound all right, but the meaning remains the child's own secret. So varied forms of words must be insisted on, to bring the secret out. And a strange secret does it often prove. A relative of mine was trying to explain to a little girl what was meant by 'the passive voice': "Suppose that you kill me: you who do the killing are in the active voice, and I, who am killed, am in the passive voice." "But how can you speak if you're killed?" said the child. "Oh, well, you may suppose that I am not yet quite dead!" The next day the child was asked, in class, to explain the passive voice, and said, "It's the kind of voice you speak with when you ain't quite dead."

In such a case as this the illustration ought to have been more varied. Every one's memory will probably furnish examples of the fantastic meaning which their childhood attached to certain verbal statements (in poetry often), and which their elders, not having any reason to suspect, never corrected. I remember being greatly moved emotionally at the age of eight by the ballad of Lord Ullin's Daughter. Yet I thought that the staining of the heather by the blood was the evil chiefly dreaded, and that, when the boatman said,

"I'll row you o'er the ferry. It is not for your silver bright, But for your winsome lady,"

he was to receive the lady for his pay. Similarly, I recently found that one of my own children was reading (and accepting) a verse of Tennyson's In Memoriam as

"Ring out the *food* of rich and poor, Ring in *redness* to all mankind,"

and finding no inward difficulty.

The only safeguard against this sort of misconceiving is to insist on varied statement, and to bring the child's conceptions, wherever it be possible, to some sort of practical test.

Let us next pass to the subject of Apperception.

XIV. APPERCEPTION

'Apperception' is a word which cuts a great figure in the pedagogics of the present day. Read, for example, this advertisement of a certain text-book, which I take from an educational journal:--

#WHAT IS APPERCEPTION?#

For an explanation of Apperception see Blank's PSYCHOLOGY, Vol. ---- of the ---- Education Series, just published.

The difference between Perception and Apperception is explained for the teacher in the preface to Blank's PSYCHOLOGY.

Many teachers are inquiring, "What is the meaning of Apperception in educational psychology?" Just the book for them is Blank's PSYCHOLOGY in which the idea was first expounded.

The most important idea in educational psychology is Apperception. The teacher may find this expounded in Blank's PSYCHOLOGY. The idea of Apperception is making a revolution in educational methods in Germany. It is explained in Blank's PSYCHOLOGY, Vol. ---- of the ---- Education Series, just published.

Blank's PSYCHOLOGY will be mailed prepaid to any address on receipt of \$1.00.

Such an advertisement is in sober earnest a disgrace to all concerned; and such talk as it indulges in is the sort of thing I had in view when I said at our first meeting that the teachers were suffering at the present day from a certain industrious mystification on the part of editors and publishers. Perhaps the word 'apperception' flourished in their eyes and ears as it nowadays often is, embodies as much of this mystification as any other single thing. The conscientious young teacher is led to believe that it contains a recondite and portentous secret, by losing the true inwardness of which her whole career may be shattered. And yet, when she turns to the books and reads about it, it seems so trivial and commonplace a matter,--meaning nothing more than the manner in which we receive a thing into our minds,--that she fears she must have missed the point through the shallowness of her intelligence, and goes about thereafter afflicted with a sense either of uncertainty or of stupidity, and in each case remaining mortified at being so inadequate to her mission.

Now apperception is an extremely useful word in pedagogics, and offers a convenient name for a process to which every teacher must frequently refer. But it verily means nothing more than the act of taking a thing into the mind. It corresponds to nothing peculiar or elementary in psychology, being only one of the innumerable results of the psychological process of association of ideas; and psychology itself can easily dispense with the word, useful as it may be in pedagogics.