

only a small part of what the pupil is required to do. He must keep notebooks, make drawings, plans, and maps, take measurements, enter the laboratory and perform experiments, consult authorities, and write essays. He must do in his fashion what is often laughed at by outsiders when it appears in prospectuses under the title of "original work," but what is really the only possible training for the doing of original work thereafter. The most colossal improvement which recent years have seen in secondary education lies in the introduction of the manual training schools; not because they will give us a people more handy and practical for domestic life and better skilled in trades, but because they will give us citizens with an entirely different intellectual fibre. Laboratory work and shop work engender a habit of observation, a knowledge of the difference between accuracy and vagueness, and an insight into nature's complexity and into the inadequacy of all abstract verbal accounts of real phenomena which, once wrought into the mind, remain there as lifelong possessions. They confer precision; because, if you are *doing* a thing, you must do it definitely right or definitely wrong. They give honesty, for when you express yourself by making things, and not by using words, it becomes impossible to dissimulate your vagueness or ignorance by ambiguity. They beget a habit of self reliance; they keep the interest and attention always cheerfully engaged, and reduce the teacher's disciplinary functions to a minimum. Of the various systems of manual training, so far as woodwork is concerned, the Swedish sloyd system, if I may have an opinion on such matters, seems to me by far the best, psychologically considered. Manual training methods, fortunately, are being slowly, but surely, introduced into all our large cities; but there is still an immense distance to traverse before they shall have gained the extension

which they are destined ultimately to possess.

No impression without expression, then, that is the first pedagogic fruit of our evolutionary conception of the mind as something instrumental to adaptive behavior. But a word may be said in continuation. The expression itself comes back to us, as I intimated a moment ago, in the form of a still further impression—the impression, namely, of what we have done. We thus receive sensible news of our behavior and its results. We hear the words we have spoken, feel our own blow as we give it, or read the success or failure of our reaction in the bystander's eyes. Now, this return wave of impression pertains to the completeness of the whole experience, and a word about its importance in the school-room may not be out of place. It would seem only natural to say that since after acting we normally get some return impression of result, it must be well to let the pupil get such return impression in every possible case. Nevertheless, in schools where examination marks and "standing" and other returns of result are concealed, the pupil is frustrated of this natural termination of the cycle of his activities, and often suffers from the sense of incompleteness and uncertainty, and there are persons who defend this system as encouraging the pupil to work for the work's sake, and not for extraneous reward. Of course, here as elsewhere, concrete experience must prevail over psychological deduction. But, as far as our psychological deduction goes, it would suggest that the pupil's eagerness to know how well he does is in the line of his normal completeness of function, and should never be balked except for very definite reasons indeed.

NATIVE REACTIONS AND ACQUIRED REACTIONS.

We are by this time fully launched upon the biological conception. Man