

Develop, then, this mental faculty at every opportunity by endeavouring to create before your mental vision a distinct image of the thing described—a picture of the reality. The power thus acquired will help you in every walk of life.

I have already dwelt on the importance of observation, and correct reasoning on the facts observed. In chemistry a student is brought face to face with nature, and with that field of nature which is capable of very accurate examination. He learns of her by reading and by experiment, and the juxtaposition of the two necessitates thought. He handles and sees the things he reads about, hence he gets definite ideas of things. He performs a certain experiment with a certain result—a result always the same, under the same conditions. The experiment is simple, the conditions easily controlled, and the result sure. This leads him to ask the cause of this inevitable result. What are the relations of the materials entering into the re-action—what the product? He has questioned nature and received a reply; he now questions himself, and the very asking the question causes thought.³ He creates a theory, or applies one he learns elsewhere, and verifies it by further experiment. The whole process is, necessarily, when properly taught, an alternation of observation and thinking; and he must observe correctly, and think correctly, or his error will certainly find him out. The punishment for error in chemistry is quick and certain, if the student only works with care. It is just in this particular that chemical work affords the most valuable training for a medical student—his little mistakes are never productive of erroneous ideas; because from the very nature of the work he must, sooner or later, detect his own error, when the work has to be done over again. This self inflicted punishment for error occurs again and again in a day's work. The little blows thus inflicted do not discourage, but tend to shape the mind, until constant watchfulness, accuracy of observation, and a determination to reach absolute truth in his work become a habit of life, a part of his very nature.

I might suggest to you, Gentlemen, many means of helping yourselves to cultivate this habit of close attention and accurate deduction; but I will refer to only one, the great value of which experience has shown me is not as fully appreciated by