true knowledge grows from a living root in the thinking soul; and whatever it may appropriate from without, it takes by living assimilation into a living organism, not by mere borrowing.

I therefore earnestly advise all young men to commence their studies, as much as possible, by direct observation of facts, and not by the mere inculcation of statements from books. A useful book was written with the title, "How to Observe." These three words might serve as a motto to guide us in the most important part of our early education—a part, unfortunately, only too much neglected. All the natural sciences are particularly valuable, not only as supplying the mind with the most rich, various and beautiful furniture, but as teaching people that most useful of all arts, how to use their eyes. It is astonishing how much we all go about with our eyes open, and yet seeing nothing. This is because the organ of vision, like other organs, requires training; and by lack of training, and the slavish dependence on books, becomes dull and slow, and ultimately incapable of exercising its natural function. Let those studies, therefore, both in school and college, be regarded as primary that teach young persons to know what they are seeing, and to see what they otherwise would fail to see. Among the most useful are Botany, Zoölogy, Mineralogy, Geology, Chemistry, Architecture, Drawing and Fine Arts. How many a Highland excursion and continental tour have been rendered comparatively useless to young persons well drilled in their books, merely from the want of a little elementary knowledge in these sciences of observation.

Observation is good, and accurate observation is better; but, on account of the vast variety of objects in the universe, the observing faculty would be overwhelmed and confounded, did we not possess some sure method of submitting their multitude to a certain regulative principle placing them under the control of our minds. This regulative principle is what we call classification, and is discoverable by human reason, because it clearly exists everywhere in a world which is the manifestation of Divine reason. This classification depends on the fundamental unity of type which the Divine reason has imposed on all things. This unity manifests itself in the creation of points of likeness in things apparently the most different; and it is these points of likeness, which when seized by a nicely observant eye, enable it to distribute the immense variety of things in the world into certain parcels of greater or less compass, called genera and species, which submit themselves naturally to the control of a comparing and discriminating mind. The first business of the student, therefore, is, in all that he sees to observe carefully the points of likeness, and, along with these, also the most striking points of difference; for the points of difference go as necessarily along with the points of likeness, as shadow goes along with light; and though they do not of themselves constitute any actual thing, yet they separate one genus from another, and one species of the same genus from another.

The classification or order to be sought for in all things is a natural order; artificial arrangements, such as that of words in an alphabetical dictionary, or of flowers in the Linnæan system of botany, may be useful helps to learners in an early stage, but if exclusively used, are rather hindrances to true knowledge. What a young man should aim at is to acquire a habit of binding things together according to their bonds of natural affinity; and this can be done only by a combination of a broad view of the general effect, with an