

accurate observation of the special properties. The names given by the common people to flowers are instances of superficial similarity, without any attempt at discrimination, as when a water-lily seems by its name to indicate that it is a species of lily, with which flower it has no real connection. A botanist, on the other hand, who has minutely observed the character and organs of plants, will class a water-lily rather with the papaverous or poppy family, and give you very good reasons for doing so. In order to assist in forming habits of observation in this age of locomotion, I should advise young men never to omit visiting the local museums of any district, as often as they may have an opportunity; and when there to confine their attention generally to that one thing which is the most characteristic of the locality. Looking at everything generally ends in remembering nothing.

Upon the foundation of carefully-observed and well-assorted facts the mind proceeds to build a more subtle structure by the process which we call reasoning. We would know not only that things are so and so, but how they are, and for what purpose they are. The essential unity of the Divine mind causes a necessary unity in the processes by which things exist and grow, no less than a unity in the type of their manifold genera and species; and into both manifestations of Divine unity we are, by the essential unity of our divinely emanated human souls, compelled to enquire. Our human reason, as proceeding from the Divine reason, is constantly employed in working out a unity or consistency or plan, to speak more popularly, in the processes of our own little lives; and we are thus naturally determined to seek for such a unity, consistency and necessary dependence, in all the operations of a world which exists only, as has been

well said, "in reason, by reason and for reason."* The quality of mind which determines a man to seek out this unity in the chain of things is what phrenologists call causality; for the cause of a thing, as popularly understood, is merely that point in the necessary succession of divinely-originated forces which immediately precedes it.

There are few human beings so contentedly superficial as to feed habitually on the knowledge of mere unexplained facts; on the contrary, as we find every day, the ready assumption of any cause for a fact, rather than remain content with none, affords ample proof that the search for causes is characteristic of every normal human intellect. What young men have chiefly to look to in this matter is to avoid being imposed on by the easy habit of taking an accidental sequence or circumstance for a real cause. It may be easy to understand that the abundant rain on the west coast of Britain is caused by the vicinity of the Atlantic Ocean; and not very difficult to comprehend how the comparative mildness of the winter season at Oban, as compared with Edinburgh or Aberdeen, is caused by the impact of a broad current of warm water from the Gulf of Mexico.

But in the region of morals and politics, where facts are often much more complex, and passions are generally strong, we constantly find examples of a species of reasoning which assumes without proving the causal dependency of the facts on which it is based. I once heard a political discourse by a noted demagogue, which consisted of the assertion, in various forms, and with various illustrations of the proposition that all the miseries of this country arise from its monarchico aristocratic

* Stirling on Protoplasm.