

the mathematical methods to the data furnished by observation and experiment; the biological or concrete sciences began with a study of living things, and have progressed immensely in our times by viewing these not in isolation, but in their relations to each other and to the surrounding lifeless world—the so-called environment. An exact treatment, that to which the term “scientific” has been pre-eminently applied, seems here also to depend largely, if not exclusively, on the degree to which the mathematical processes of numbering and measuring can be applied, and on the utilisation of the general results arrived at in the abstract sciences.

2.  
Their  
different  
methods.

The method of the abstract sciences is that of building up from small beginnings, by the process of summation or integration, intricate complexes which not infrequently are found to correspond to phenomena of actual experience. It has at its command the unlimited resolving powers of the calculus, and the well-established assumption that things natural are made up of numberless particles entering into innumerable combinations. The whole is thus for the mathematical view the sum of its parts. The concrete or natural sciences, on the other hand, start with the ready-made things or creatures of nature, or on a larger scale with the great order and economy of our world or the universe, and only descend into the minutiae of the observatory, the dissecting-room, or the laboratory, with the hope of better understanding the great and complicated objects of their study. The greatest progress in the abstract sciences has been made by those minds that could concentrate their attention on special points, not infrequently expressed in