

mulation as peat-bogs, etc., and, 2nd, animal agencies, such as coral reefs and other subjects of that nature.

The third division, *Historical* geology, or as some call it "*Stratigraphical* geology, treats of the rocks in the order of their formation with the contemporaneous events in their geological history, and includes both stratigraphical and paleontological geology, the latter being regarded by some, however, as a distinct branch, with a review of the laws or systems of progress in the globe and in its kingdoms of life. While in this place we can only consider the science of geology properly so called, we may say that its relation to many other physical sciences is exceedingly intimate. Among these may be specially mentioned astronomy, chemistry, mineralogy, zoology and botany, with all of which, and with others, the elucidation of the many geological problems which constantly arise requires an acquaintance more or less profound. In the present stage of the science each of these subjects is frequently assigned to a specialist in that particular branch, in so far at least as it applies to the science of geology. Thus the chemist and lithologist study the composition and peculiarities of the several kinds of rock structure. The paleontologist studies the remains of organic life, in which now paleontological botany forms a special branch. The mineralogist works out the peculiar properties of the several varieties of minerals which are encountered, and this division of study is carried on almost indefinitely in certain lines; thus one person devotes his time to studying the peculiarities of special forms of life, as, for instance, the graptolites, the trilobites, the extinct mammalia, and so on.

With the early history of our planet, or that part of its history which precedes the appearance of solid land, known in geological language as the Laurentian time, geology proper is supposed to have nothing to do, its strict province being confined to the study of the rocks of the earth's crust itself. So intimately, however, are the rocks of the Laurentian time connected with the original crust of the earth that the consideration of the agencies which led to the deposition or formation of that crust is by many regarded as strictly within the province of geological investigation, and in most works on the science we find a chapter devoted to the early history of the earth, viz.: that portion of it