

I have included also in the foregoing table a column for *Groups or Periods*, because some readers will be glad of this more detailed information. This is a dry and unadorned skeleton; but geology knows how to clothe it in flesh and beauty.

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### XIII. COURSES OF THE EARTH'S MASONRY.

#### HOW THE FORMATIONS ARE ARRANGED.

FIRST, let me explain what is meant by a *formation*. It is the mass of rock resulting from some action continued uniformly to a conclusion or a pause. It was indicated in our last Talk that the conditions of the world must have changed from time to time, and that the nature of the ocean sediments must have changed correspondingly. The sediments laid down during the time in which we conclude to say no change occurred, are one formation. After this, a slight change would result in another formation. But these two formations may much resemble each other, though decidedly different from the contiguous formations above and below. These two formations together may, therefore, be said to constitute a formation in a larger sense, accumulated during a time when the main action continued the same, though in subordinate particulars it changed. Formation, therefore, is a general term, not always signifying the same amount of accumulation nor even the same range of diversity. We may employ it in various applications, and we shall find it convenient to have such a term. A System is a "formation;" a Great System is a "formation;" a coal-bed is a "formation;" a river-terrace is a "formation," and a metallic vein is a "formation." I must state, however, that the term is not employed by all geologists in this indefinite sense.

Glancing back, now, to the beginning of sedimentary formations, we recognize two principles which must be accepted. *First*, the oldest or lowest sedimentary formation must have rested on a foundation *not* sedimentary. The nature of that foundation will have some light thrown upon it after we have