

a mammal have been preserved for thousands of years, as in the case of mammoth carcasses entombed in the frozen mud-cliffs of Siberia.<sup>2</sup> Generally, all or most of the original animal matter has disappeared, and the organism has been more or less completely mineralized or petrified. It often happens that the whole organism has decayed, and a mere cast in amorphous mineral matter, as sand, clay, ironstone, silica, or limestone, remains; yet all these variations must be comprised in the comprehensive term fossil.

Two preliminary questions demand attention: in the first place, how remains of plants and animals come to be entombed in rocks, and in the second, how they have been preserved there so as to be now recognizable.

§ 4. **Conditions for the entombment of organic remains.**—If what takes place at the present day may fairly be taken as an indication of what has been the ordinary condition of things in the geological past, there must have been so many chances against the conservation of either animal or plant remains, that their occurrence among stratified formations should be regarded as exceptional, and as the result of various fortunate accidents.

1. **On Land.**—Let us consider, in the first place, what chances exist for the preservation of remains of the present fauna and flora of a country. The surface of the land may be densely clothed with forest, and abundantly peopled with animal life. But the trees die and moulder into soil. The animals, too, disappear, generation after generation, and leave few perceptible traces of their existence. If we were not aware from authentic records that central and

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<sup>2</sup> For particulars of a recent exhumation see "Beiträge zur Kenntniss des Russischen Reiches," Bd. III., 1887, p. 175.