*epoch has had its peculiar species, or peculiar groups of species.* Moreover, the succession of life has followed a grand law of progress, involving under a single system a closer and closer approximation in the species, as time moved on, to those which now exist. It follows, therefore, that *identity of species of fossils proves approximate identity of age.*

Equivalency is sometimes shown in an identity of species; more often in a parallel series of nearly related species; often by an identity or close relation in the genera or families; often also in some prominent peculiarity of the various species under a family or class.

Through a comparison of fossils, it was discovered that the Chalk formation exists on the Atlantic border of the United States, although the region contains no *chalk;* that the Coal formation of North America and that of Newcastle, England, belong in all probability to the same geological age; and so on.

The progress in life has not consisted in change of species alone. The species of a genus often present, in successive periods, some new feature; or the higher groups under an order or class some modification, or some new range of genera, so that, even when the species differ, the habit or general characters of the species, or the range of genera or families represented, may serve to determine the era to which a rock belongs, or at least to check off the eras to which it does not belong. Thus Spirifer, a genus of mollusks, which has a narrow form in the Silurian, has often a very broad form in the course of the Devonian and the Carboniferous ages. Ganoid fishes, which have vertebrated tails through long ages, have their tails not vertebrated in after time. Trilobites become wholly extinct at a certain epoch in their history. These are examples of a principle availed of in multitudes of cases presenting minor differences.

Much aid is derived also from the canon brought forward by Agassiz in the first volume of his *Poissons Fossiles* (1833, pages 208–270), and considered at length in one of the chapters in his *Natural History of the United States* (i. 112, 1857): that, under the various tribes, the geological succession of species often corresponds in some of the more general characteristics with the succession of phases in the development of living representatives of those tribes. In other words, geological succession and modern embryological succession have near parallelisms.

Agassiz says, in his work on Fossil Fishes (vol. i, page 169): "J'ai déjà eu plus d'une fois occasion de faire remarquer la grande analogie qu'il y a entre certaines formes embryoniques, qui sont passagères dans le développement des individus, et les caractères constans d'une foule de genres de différentes familles, qui n'ont que peu de représentans dans la création actuelle, ou qui sont complétement éteints." In his work on the Natural History of the United States, on page 112 of the chapter on "the Parallelism between the geological succession of animals and the embryonic growth of their living representatives," Agassiz states the principle as follows: "The phases of development of all living animals correspond to the order of succession of their extinct representatives in past geological time."