

be sufficient as a basis for similar comparisons. The class of Crustacea, on the contrary, is very instructive in this respect; but, to trace our comparisons through the whole series, it is necessary that we should consider simultaneously the embryonic growth of the higher Entomostraca, such as *Limulus*, and that of the highest order of the class,<sup>1</sup> when it will appear, that as the former recall in early life the form and character of the Trilobites, so does the young Crab passing through the form of the Isopods, and that of the Macrouran Decapods, before it assumes its typical form as Brachyuran, recall the well-known succession of Crustacea through the geological middle ages and the tertiary periods to the present day. The early appearance of Scorpions, in the Carboniferous period, is probably also a fact to the point, if, as I have attempted to show, Arachnidians may be considered as exemplifying the chrysalis stage of development of Insects;<sup>2</sup> but, for reasons already stated (Sect. XXIV.) it is hardly possible to take Insects into consideration in these inquiries.

In my researches upon fossil Fishes,<sup>3</sup> I have pointed out at length the embryonic character of the oldest fishes, but much remains to be done in that direction. The only fact of importance I have learned of late, is that the young *Lepidosteus*, long after it has been hatched, exhibits in the form of its tail, characters, thus far only known among the fossil fishes of the Devonian system.<sup>4</sup> It is to be hoped, that the embryology of the Crocodile will throw some light upon the succession of the gigantic Reptiles of the middle geological ages, as I shall show, that the embryology of Turtles throws light upon the fossil Chelonians. It is already plain, that the embryonic changes of Batrachians coincide with what is known of their succession in past ages.<sup>5</sup> The fossil Birds are too little known, and the fossil Mammalia<sup>6</sup> do not extend through a sufficiently long series of geological formations to afford many striking points of comparison; yet, the characteristic peculiarities of their extinct genera exhibit everywhere indications, that their living representatives in early life resemble them more than they do their own parents. A minute comparison of a young elephant, with any mastodon, will show this most fully, not only in the peculiarities of their teeth, but even in the proportion of their limbs, their toes, etc.

It may, therefore, be considered as a general fact, very likely to be more fully illustrated as investigations cover a wider ground, that the phases of development of all living animals correspond to the order of succession of their extinct representatives in past geological times. As far as this goes, the oldest representatives

<sup>1</sup> AGASSIZ, (L.) Twelve Lectures, etc., p. 66.

<sup>2</sup> Classif. of Insects, q. n., p. 85.

<sup>3</sup> Poiss. fossiles, q. n., p. 54.

<sup>4</sup> AGASSIZ, (L.) Lake Superior, etc., p. 254.

<sup>5</sup> See the works, q. n., p. 82, note 3.

<sup>6</sup> Cuv., Oss. foss., q. n.: also, AGASSIZ, (L.) Zoölogical Character of Young Mammalia, Proc. Am. Ass. Adv. Sc., Cambridge, 1849, p. 85.