above Radiata, as both stand below Vertebrata, but constructed upon plans expressing different tendencies. To appreciate more precisely these most general relations among the great types of the animal kingdom, will require deeper investigations into the character of their plan of structure than have been made thus far.[1] Let, however, the respective standing of these great divisions be what it may; let them differ only in tendency, or in plan of structure, or in the height to which they rise, admitting their base to be on one level or nearly so, so much is certain, that in each type there are representatives exhibiting a highly complicated structure and others which appear very simple. Now, the very fact that such extremes may be traced, within the natural boundaries of each type, shows that in whatever manner these great types are supposed to follow one another in a single series, the highest representative of the preceding type must join on to the lowest representative of the following, thus bringing necessarily together the most heterogeneous forms.[2] It must be further evident, that in proportion as the internal arrangement of each great type will be more perfected, the greater is likely to appear the difference at the two ends of the series which are ultimately to be brought into connection with those of other series, in any attempt to establish a single series for all animals.

I doubt whether there is a naturalist now living who could object to an arrangement in which, to determine the respective standing of Radiata, Polyps would be placed lowest, Acalephs next, and Echinoderms highest; a similar arrangement of Mollusks would bring Acephala lowest, Gasteropoda next, and Cephalopoda highest; Articulata would appear in the following order: Worms, Crustacea, and Insects, and Vertebrata, with the Fishes lowest, next Reptiles and Birds, and Mammalia highest. I have here purposely avoided every allusion to controverted points. Now if Mollusks were to follow Radiata in a simple series, Acephala should join on to the Echinoderms; if Articulata, Worms would be the connecting link. We should then have either Cephalopods or Insects, as the highest term of a series beginning with Radiata, followed by Mollusks or by Articulates. In the first case, Cephalopods would be followed by Worms; in the second, Insects by Acephala. Again, the connection with Vertebrata would be made either by Cephalopods, if Articulata were considered as lower than Mollusks, or by Insects, if Mollusks were placed below Articulata. Who does not see, therefore, that in proportion as our knowledge of the true affinities of animals is improving, we accumulate more and more convincing evidence against the idea that the animal kingdom constitutes one simple series?

[1] I regret to be unable to refer here to the contents of a course of lectures which I delivered upon this subject, in the Smithsonian Institution, in 1852. Compare, meanwhile, my paper, On the Differences between Progressive, Embryonic, and Prophetic Types, Proc. Am. Assoc. for 1849, p. 432.

[2] AGASSIZ, (L.,) Animal Morphology, Proc. Am. Assoc. for 1849, p. 415.