

to the unlikelihood of such shells being preserved? Or is it owing to the lack of diligence and care in collecting?

In this particular case we are, no doubt, disposed to say that the series must have been continuous. But we cannot be sure of this. In whatever way a few species of land snails were so early introduced in the time of the Devonian or of the Coal formation, if from physical vicissitudes or lack of proper pabulum they became extinct, there is no reason known to us why, when circumstances again became favourable, they should not be reintroduced in the same manner as at first, whether by development from allied types or otherwise. The fact that the few Devonian and Carboniferous species are very like those that still exist, perhaps makes against this supposition, but does not exclude it. If we suppose that new forms of life of low grade are introduced from time to time in the course of the geological ages, and if we adopt the Darwinian hypothesis of evolution, we arrive, as Naegeli has so well pointed out, at the strange paradox, that the highest forms of life must be the oldest of all, since they will be the descendants of the earliest of the lower animals, whereas the animals now of low grade may have been introduced later, and may not have had time to improve. But all our attempts to reduce nature to one philosophic expression necessarily lead to such paradoxes.

On the other hand, the chances of the preservation of land snails in aqueous deposits are vastly less than those in favour of the preservation of aquatic species. The first Carboniferous species found¹ had been preserved in the very exceptional circumstances afforded by the existence of hollow trunks of *Sigillariæ* on the borders of the Coal formation flats, and the others subsequently found were in beds no doubt receiving the drainage of neighbouring land areas. Still it is not uncommon on the modern sea-shore, anywhere near the mouths of rivers, to find a few freshwater shells here and there. The

¹ *Pupa vetusta* of the Nova Scotia coal formation.