conditions of the case, that was a correlation arising from the plans of the Creator, and with which their poor brains and greater or less safety and comfort had nothing to do. If we were disposed to accept this hypothesis of Owen, we should not in doing so arrive at any true cause, and we should at the same time find ourselves involved in the old difficulties. That a Hipparion should change into a horse it would be necessary that not only his feet but his teeth and other structures should change in harmony with each other. This must take place either at once or gradually. If at once, then a pair of horses must be born from Hipparia in one herd, and must be isolated from the rest so as to produce a herd of horses. This is hard to believe; and if we resort to gradual change, the required isolation of the breed will be still more difficult to secure. The demands upon our faith are obviously greater here than even in the hypothesis of Darwin,—that is if we can be induced to place any reliance on the argument of the latter as to struggle for existence.

(4.) The last of these hypotheses which I shall notice, and, in my view, the most promising of them all, is one which has recently been ably advocated by Mr. Edward D. Cope in a memoir on the "Origin of Genera," published in the Proceedings of the Academy of Natural Sciences,* and which is based on the well-known analogy between embryonic changes, rank in the Zoological scale and Geological succession. It may be illustrated by the remarkable and somewhat startling fact, that while no authenticated case exists of animals changing from one species to another, they are known to change from one genus or family to another, and this without losing their individuality. Prof. Dumeril, of Paris, and Prof. Marsh, of New Haven, have recently directed attention to the fact that species of *Siredon*, reptiles of the Lakes of the Rocky Mountains and of Mexico, and which, like our North American *Menobranchus*, retain their gills during life, when kept in captivity in a warmer temperature than that which is natural to them, lose their gills, and pass into a form hitherto regarded as of a different genus and family,—the genus *Amblysoma*. In this case we may either suppose that the Amblysoma, under unfavourable circumstances, has its maturity and reproduction prematurely induced before it has lost its

* Philadelphia, 1869.