posite to those employed by breeders for their purposes. (2) Even if we include, along with the struggle for existence, the action of all conditions, favourable and unfavourable, tending to change, we fail to find any evidence of this other than the formation of varieties and races. True species, no longer capable of interbreeding, have not been observed to be produced. (3) Though it is conceivable that species may have been produced during the lapse of time, yet even this is rendered improbable by the enormously long periods which Mr. Darwin himself admits to be necessary, and which seem to overgo the possibility of the existence of the creatures in question as far back in geological time as the theory demands.

(3.) Owen desires to substitute for the above views "an innate tendency to deviate from the parental type operating through periods of adequate duration." According to this hypothesis "a change takes place first in the structure of the animal, and this when sufficiently advanced may lead to modifications of habits." It is difficult to understand this as anything more than a mere statement of a belief in derivation as a fact. It seems to mean that species change because they tend to change. We may add to this if we please that they change independently of external circumstances, and by virtue of a creative plan embodied in them, or rather in the matter of which they are composed; for Prof. Owen appears to stretch his theory so far as to assert the formation of species spontaneously from inorganic matter, thus giving us the additional thesis that species tend to be before they actually exist. It is also to be observed that the tendency to change, though not caused by external circumstances must act in unison with physical changes, otherwise it would be worse than useless. Taking the case of the Hipparion and horse, Lamarck would inform us that the former endeavoured to accommodate itself to drier and harder ground, and thus changed the character of its feet. Darwin would say that as the ground became harder those individuals which had the most equine feet would succeed best in the struggle for existence. Owen very properly demurs to both views, holding that there were dry and wet places suitable for horses and Hipparia both in the Miocene and Modern periods, and that the increase of dry ground would merely limit the range of Hipparia and not produce horses; but he holds that the Hipparia changed into horses merely because they tended to do so, and that if the change suited the