

pygidium, and the greatest number of thoracic segments. Indeed there are forms to represent almost every stage, and there can I think be no doubt that in the fauna of the Tremadoc group, which is separated from the earlier Cambrian by several thousand feet of deposits indicating a period of very shallow water in which large brachiopods and phyllopod crustaceans were the prevailing forms of life, we witness a return to very much the same conditions as existed in the earlier Cambrian periods, and with these conditions a fauna retaining a marked likeness to the earlier one, and in which the earlier types are almost reproduced, though of course greatly changed during their previous migrations. The *Niobe*(?) recently found in the Tremadoc rocks is truly a degraded *Paradoxides*, retaining the glabella and head spines, but with the rings of the thorax, excepting eight, consolidated together to form an enormous tail. Instead therefore of having here, as stated by M. Barrande, "a very important discord between Darwinism and facts," we find in these early faunas facts strongly favouring such a theory, and in support of evolution.

This is an exquisite piece of evolutionist reasoning, worthy of some of the greater masters of this peculiar logic. It is assumed that specific differences are "gradations" and the word "almost" covers the gaps between these. It is taken for granted that *Paradoxides*, which disappears with the Menavian age, has only gone upon its travels to parts unknown, and after the deposition of several thousand feet of beds, returns disguised as the *Niobe* of the Tremadoc,—and not only changed but "degraded",—a sorry result certainly of the struggle for existence in the interval, and holding out small prospect that the creature can be promoted in any subsequent age into a fish or even into a Decapod. If Barrande's reasoning can be met only in this way, he need not fear for the result. Seriously, one scarcely knows whether to be amused or grieved at the phases which the doctrine of derivation assumes in the writings of some modern naturalists. It is at least devoutly to be hoped, in order that science may not fall under the contempt of all thinking men, that the advocates of this hypothesis may become more careful in their treatment of facts, and more modest in their demands on our faith.

In the meantime the record of the rocks is decidedly against them in the particular point to which I have above adverted, namely, the abrupt appearance of new forms under several specific types and without apparent predecessors. They should direct their attention in this connection to the appearance of Foraminifera in the Laurentian, of Sponges, Brachiopods, Trilobites,