

that the aqueous and volcanic rocks were afterwards superimposed, and should, therefore, rank as secondary in the order of time. This idea was adopted in the infancy of the science, when all formations, whether stratified or unstratified, earthy or crystalline, with or without fossils, were alike regarded as of aqueous origin. At that period it was naturally argued, that the foundation must be older than the superstructure; but it was afterwards discovered, that this opinion was by no means in every instance a legitimate deduction from facts; for the inferior parts of the earth's crust have often been modified, and even entirely changed, by the influence of volcanic and other subterranean causes, while superimposed formations have not been in the slightest degree altered. In other words, the destroying and renovating processes have given birth to new rocks below, while those above, whether crystalline or fossiliferous, have remained in their ancient condition. Even in cities, such as Venice and Amsterdam, it cannot be laid down as universally true, that the upper parts of each edifice, whether of brick or marble, are more modern than the foundations on which they rest, for these often consist of wooden piles, which may have rotted and been replaced one after the other, without the least injury to the buildings above; meanwhile, these may have required scarcely any repair, and may have been constantly inhabited. So it is with the habitable surface of our globe, in its relation to large masses of rock immediately below: it may continue the same for ages, while subjacent materials, at a great depth, are passing from a solid to a fluid state, and then reconsolidating, so as to acquire a new texture.

As all the crystalline rocks may, in some respects, be viewed as belonging to one great family, whether they be stratified or unstratified, plutonic or metamorphic, it will often be convenient to speak of them by one common name. It being now ascertained, as above stated, that they are of very different ages, sometimes newer than the strata called secondary, the terms primitive and primary, which were formerly used for the whole, must be abandoned, as they would imply a manifest contradiction. It is indispensable, therefore, to find a new name, one which must not be of chronological import, and must express, on the one hand, some peculiarity equally attributable to granite and gneiss (to the plutonic as well as the *altered* rocks), and, on the other, must have reference to characters in which those rocks differ, both from the volcanic and from the *unaltered* sedimentary strata. I proposed in the Principles of Geology (first edition, vol. iii.), the term "hypogene" for this purpose, derived from *ὑπο*, *under*, and *γίνομαι*, *to be*, or *to be born*; a word implying the theory that granite, gneiss, and the other crystalline formations are alike *nether-formed* rocks, or rocks which have not assumed their present form and structure at the surface. They occupy the lowest place in the order of superposition. Even in regions such as the Alps, where some masses of granite and gneiss can be shown to be of comparatively modern date, belonging, for example, to the period hereafter to be described as tertiary, they are still *underlying* rocks. They never repose