

## IGNEOUS FORMATIONS.

1. *Products of Active Volcanos.*

It is sufficient, for the purpose of our present argument, simply to name the products of active volcanos. They are well known; their causes are now in active operation, and lava beds and currents are still frequently forming, in many countries. They often bear, in their very texture and features, palpable marks of the agency of fire, and thus they inform us, in very intelligible language, that they are indeed ignigenous: even when these features are not distinctly legible, it often happens that the geographical and geological position of the masses does not permit us to entertain a doubt of their volcanic origin. We observe their currents, and we recognize their birth from fire, even when they form beds of solid rock, which have no appearances of scoriæ, cinders, glass, or gaseous inflation, except, perhaps, on their upper surfaces. No one doubts that volcanic currents overflow whatever lies in their way, and therefore we find them covering, occasionally, every geological formation, and every work of man which can withstand the action of heat.

This topic was sufficiently illustrated in the introductory remarks, and every one admits (what is indeed only a single instance of a general truth in geology) that the superincumbent mass is, generally, of more recent origin than that upon which it lies. The evidence presented by the eruptions of active volcanos, and the igneous formations which they produce, goes then to establish the truth of geological succession, but does not necessarily imply that its events are more ancient than the commencement of organic life. This remark is limited to volcanos strictly so called, and is not intended to include the unstratified rocks, concerning the igneous or aqueous origin of which, there has been, heretofore, much discussion and opposition of opinion, although they are now generally attributed to the agency of heat.

2. *Products of Extinct Volcanos.*

Much philosophical scepticism formerly existed with respect to extinct volcanos. They were vaguely referred to, but without decisive proof of their real volcanic origin; and many persons, very imperfectly qualified to judge of such questions, were sufficiently inclined to infer the existence of volcanos of former ages, wherever they saw a conical hill, or almost any hill, with a hollow on its summit; and porous stones, of whatever kind, were referred to a similar origin. It was a very imposing and sublime idea, that volcanic fire, still active