

deposited in successive, and often corresponding layers on each side of the vein.

Metallic Veins are of most frequent occurrence in rocks of the Primary and Transition series, particularly in those lower portions of stratified rocks which are nearest to unstratified crystalline rocks. They are of rare occurrence in Secondary formations, and still more so in Tertiary strata.\*

\* M. Dufrenoy has recently shewn that the mines of Hæmatite and Spathic iron in the Eastern Pyrenees, which occur in Limestones of three ages, referrible severally to the Transition Series, to the Lias, and to the Chalk, are all situated in parts, where these Limestones are in near contact with the Granite; and he considers that they have all most probably been filled by the sublimation of mineral matter into cavities of the limestones, at, or soon after the time of the Elevation of the Granite of this part of the Pyrenees. The period of this elevation was posterior to the deposit of the Chalk formation, and anterior to that of the Tertiary Strata. These Limestones have all become crystalline where they are in contact with the Granite; and the Iron is in some places mixed with Copper pyrites, and Argentiferous galena. (*Mémoire sur la Position des Mines de Fer de la Partie orientale des Pyrénées*, 1834.)

According to the recent observations of Mr. C. Darwin, the Granite of the Cordilleras of Chili (near the Uspellata Pass) which forms peaks of a height probably of 14,000 feet, has been fluid in the Tertiary period; and Tertiary strata which have been rendered crystalline by its heat, and are traversed by dykes from the granitic mass, are now inclined at high angles, and form regular, and complicated anticlinal lines. These same sedimentary strata, and also lavas are there traversed by very numerous true metallic veins of iron, copper, arsenic, silver, and gold, and these can be traced to the underlying granite. (*Lond. and Edin. Phil. Mag. N. S. Vol. 8, p. 158.*)