

of the results which have been obtained. The positions and relations of the secondary strata afford the principal data by which this problem may be solved; for, as secondary and tertiary formations have been deposited in directions either nearly or entirely horizontal, it is obvious, that when they are found highly inclined, and in contact with mountain masses of primary or volcanic rocks, the latter must have been protruded *since* the sedimentary were deposited, and of course during the secondary or tertiary epochs, as the case may be. On the contrary, if we find other strata in contact with the same masses, but only touching them with their edges, or encircling their base, it is evident that the mountains must have been elevated before the formation of the surrounding deposits. It is by cautious inductions of this kind, that a distinguished savant, M. Elie de Beaumont has shown—1. That the mountains of Erzgebirge, in Saxony, and of the Côte d'Or in Burgundy, are newer than the Jura limestone, but older than the green sand and chalk. 2. That the Pyrenees and Apennines are of about the same age with the chalk formation. 3. That the western part of the Alps is newer than the older tertiary formations, and was raised up after the last of the newer pliocene were deposited. The Caernarvon chain was elevated anterior to the deposition of the mountain limestone, for the latter wraps round it like a mantle.\*

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