

angular blocks of granite, gneiss, and other crystalline formations, came from the Alps, and that they have been brought for a distance of 50 miles and upwards across one of the widest and deepest valleys of the world, so that they are now lodged on the hills and valleys of a chain composed of limestone and other formations, altogether distinct from those of the Alps. Their great size and angularity, after a journey of so many leagues, has justly excited wonder; for hundreds of them are as large as cottages; and one in particular, celebrated under the name of *Pierre à Bot*, rests on the side of a hill about 900 feet above the lake of *Neufchâtel*, and is no less than 40 feet in diameter.

It will be remarked that these blocks on the Jura offer an exception to the rule before laid down, as applicable in general to erratics, since they have gone from south to north. Some of the largest masses of granite and gneiss have been found to contain 50,000 and 60,000 cubic feet of stone, and one limestone block at *Devens*, near *Box*, which has travelled 30 miles, contains 161,000 cubic feet, its angles being sharp and unworn.*

Von Buch, *Escher*, and *Studer* have shown, from an examination of the mineral composition of the boulders, that those on the western Jura, near *Neufchâtel*, have come from the region of *Mont Blanc* and the *Valais*; those on the middle parts of the Jura from the *Bernese Oberland*; and those on the eastern Jura from the Alps of the small cantons, *Glaris*, *Schwytz*, *Uri*, and *Zug*. The blocks, therefore, of these three great districts have been derived from parts of the Alps nearest to the localities in the Jura where we now find them, as if they had crossed the great valley in a direction at right angles to its length: the most western stream having followed the course of the *Rhone*; the central, that of the *Aar*; and the eastern, that of the two great rivers, *Reuss* and *Limmat*. The non-intermixture of these groups of travelled fragments, except near their confines, was always regarded as most enigmatical by those who adopted the opinion of *Saussure*, that they were all whirled along by a rapid current of muddy water rushing from the Alps.

M. Charpentier first suggested, as before mentioned, that the Swiss glaciers once reached continuously to the Jura, and conveyed to them these erratics; but at the same time he conceived that the Alps were formerly higher than now. *M. Agassiz*, on the other hand, instead of introducing distinct and separate glaciers, suggested that the whole valley of Switzerland might have been filled with ice, and that one great sheet of it extended from the Alps to the Jura, when the two chains were of the same height as now relatively to each other. Such an hypothesis labors under this difficulty, that the difference of altitude, when distributed over a space of 50 miles, gives an inclination of no more than two degrees, or far less than that of any known glaciers. It has, however, since received the able support of Professor *James Forbes*, in his excellent work on the Alps, published in 1843.

* *Archiac*, *Hist. des Progrès*, &c. vol. ii. p. 240.