

Hungarian mountains, was introduced between the central Alps and the southern zones. Professor Suess then demonstrated a similar unilateral structure for the Balkan, Caucasus, and Ararat mountains, and in all cases the action of the tangential forces had been from south to north.

Hence a surprising similarity was demonstrated between the mountains of Europe and those in North America which had been described by Rogers and Dana, and the theory of lateral compression so widely accepted by American geologists seemed applicable to European mountain-chains with but few modifications. Élie de Beaumont's method of determining the ages of the mountain-chains was clearly unsuitable upon this new conception of their structure. According to Professor Suess, the tectonical disturbances which gave form to the present Alpine system had begun in the Mesozoic period, and had continued not only to the close of the Miocene time, but (at least on the southern slopes) into the Pliocene and possibly even the Diluvial Age. In considering the actual lines of deformation, Suess pointed out that allowance must be made for the retaining influences exerted by neighbouring immovable mountain-blocks, by ancient intruded and interbedded volcanic rocks, and by the resistance of the rock-folds themselves.

A study of the older mountain-masses (afterwards called "Horsts" by Suess) limiting the Alps on the west and north, showed that the same direction of force which had folded the Alps had also determined the structure of the Riesen mountains, the Sudeten mountains, the Bohemian forest, the Harz, the Ardennes, etc., and that this Central European mountain-system of high geological antiquity had, like the later Alpine system, been compressed by horizontal forces acting towards the north-west, north, or north-east. Although in Europe as in North America, the dominating direction of pressure had come from the south, there were also evidences of compression towards the south. Val Sugana in the southern Alps, Istria, Dalmatia and the Karst, the Ifer mountains, and the Teutoburg forest were mentioned as types of southward compression. Yet so prevalent was the northern direction of movement over vast regions between the Caspian Sea and the American shores of the Pacific Ocean, that one might feel tempted to deduce a general streaming of rock-material towards the North Pole throughout the whole Northern Hemisphere. But several facts contradicted such a con-