

Pencati had drawn attention to the fact that not far from Predazzo, at the waterfall of Canzacoli, true granite covered the Alpine limestone and had altered it to marble. Leopold von Buch doubted in 1821 the position of the granite above the limestone, but allowed that the granite had produced the metamorphism of the limestone to marble. Then followed Buch's famous papers on dolomite, and on the geology of the Fassa Valley, in which he on the one hand tried to explain the origin of the dolomite by the action of magnesia vapours during the eruption of augite porphyry, and on the other hand associated the upheaval of the Alps with the outbreaks of augite porphyry.

Buch's declaration that in South Tyrol lay the key to the solution of Alpine geology, attracted geologists from all countries to this neighbourhood. The "Triassic granite" and Monzoni syenite, with their wonderful array of contact minerals, the dykes and massive sheets of augite porphyry, melaphyre and liebenerite porphyry, were described by several geologists. In 1824 Poulett-Scrope, Studer, and Ami Boué visited Predazzo; in 1843 Von Klipstein published his observations on the Fleims and Fassa Valley; in 1855 the Norwegian mineralogist, Kjerulf, published his accurate mineralogical and chemical investigation of the Monzoni syenite.

Baron von Richthofen's monograph, published in 1860, still forms the best foundation for the geology of South Tyrol. He determined a definite succession in the Triassic eruptive rocks—first the basic series, augite, porphyrite, monzonite, and hypersthenite, then flows of lava, or the infilling of fissures by tourmaline granite, melaphyre, and liebenerite porphyry. Three years later Bernhardt von Cotta's paper appeared on the intrusions and ramifications of the Monzoni syenite into the limestone, on contact minerals, and on the melaphyre dykes in the limestone and dolomite. Lapparent in 1864 sub-divided the eruptive rocks of the neighbourhood into a basic and an acid group, without entering into the particular succession, but Doelter's petrographical studies led him to much the same conclusion about the succession as Richthofen had formed. Reyer, on the other hand, thought that granite and then syenite had been intruded during the Muschelkalk period; monzonite, porphyrite, and andesite had followed; but in his opinion the same eruptive series had been repeated in various geological epochs. Mojsisovics' work, *The*