

underneath the Jurassic series, and are referred to the Trias. On the Italian side, they swell out to great proportions, reaching a thickness of more than 13,000 feet along the line of the Mont Cenis Tunnel. Traced through Piedmont, they are found to play an important part in the structure of the northern Apennines, where they contain the celebrated statuary marbles of Carrara (p. 1043). They have undergone, in these mountainous tracts, extensive metamorphism, the original shales or marls being changed into lustrous schists, and the limestones into crystalline marbles. But even in this altered condition Triassic fossils have been found in them.

Already in Triassic time a notable distinction had been established between the geographical conditions of the regions now marked by the eastern and western Alps. The line of division between the two areas may be said to coincide generally with that ancient line of N.E. and S.W. disturbance known as the "Rhine-Ticino fault." To the west the Triassic deposits point to varying conditions of lagoons and inland seas. Eastward, however, the corresponding deposits attain an enormous development, and are now recognized as presenting a record of the deeper water or pelagic conditions of the Triassic period. As Mojsisovics has remarked, what England and North America are for the Palæozoic formations in general, what Bohemia is for the Silurian system, what the Jura Mountains are for the Jurassic deposits, the eastern Alps are for the Trias.<sup>25</sup> Special interest attaches to the Trias of the eastern Alps from the great thickness of its limestones and their thoroughly marine fauna, with a commingling of Palæozoic and Mesozoic types intercalated between the Permian and Jurassic systems. It would appear that during the deposition of these limestones the central core of crystalline and Palæozoic rocks of the

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von Predazzo," etc. Gotha, 1860; Gümbel, "Geog. Beschreib. des Bayerisch. Alpen," 1861; Stur, "Geologie der Steiermark," 1871; E. von Mojsisovics, Jahrb. Geol. Reichsanstalt, Vienna, 1869, 1874, 1875, 1880; Abhandl. Geol. Reichsanstalt, vi. 1875, p. 82; Verhandl. Geol. Reichsanstalt, 1866, 1875, 1879; and "Dolomitriffe Südtirols und Venetiens," 1878; E. Süss, "Die Entstehung der Alpen," 1875; also memoirs by Von Hauer, Laube, Süss, Stache, Stur, Toulà, Bittner, and others in the Jahrb. Geol. Reichsanstalt; Von Hauer's "Geologie," p. 358 *et seq.*; Miss M. Ogilvie, Quart. Journ. Geol. Soc. xlix. 1893, p. 1. The fossils are described by Benecke, Geol. Palæontol. Beitr. vol. ii.; Mojsisovics, Abhandl. k. k. Geol. Reichsanst. vii. x.; Bittner, op. cit. vol. xiv.; G. L. Laube, Denksch. Akad. Wien, xxiv.-xxx.; numerous other memoirs are cited by Mojsisovics in his "Dolomitriffe."

<sup>25</sup> "Die Dolomitriffe," p. 39.