

Rhætic fossils in the beds immediately succeeding them. Again, the same fossils give undoubted evidence of the gradual submersion of the island of older crystalline and Palæozoic rock in the Triassic sea of the eastern Alps. Rhætic fossils are found on the Radstadter Tauer and on the Stubey Mountains in the central chain of the Alps.

The intrusive volcanic rocks of the celebrated districts of Predazzo and Monzoni in South Tyrol are referred by some authors to Lower, by others to Upper Triassic time. At Predazzo there is a core of orthoclase porphyry and tourmaline granite with an envelope of syenite, by which, among the now familiar phenomena of contact-metamorphism, the Triassic limestones have been in places converted into marble. Similar phenomena are presented at Monzoni, where a central boss of augite-syenite, traversed by veins of gabbro, melaphyre, etc., cuts across the Triassic strata (ante, p. 1001).

The Triassic rocks of the Alps have participated in the great earth-movements to which this chain of mountains owes its structure, and they consequently present remarkable cases of dislocation, inversion, and even of metamorphism. Thus the Triassic formations of the Radstadter Tauer in the Tyrol cannot be separated from the calc-mica schist of that district, and Prof. Suss regards this schist as an altered Triassic limestone.<sup>29</sup>

**Spitzbergen.**—Since the Alpine type of the Trias has been recognized as that of the open sea, it has been traced far and wide over the Old World, northward into the Arctic Circle, eastward across Asia to Australasia, and along the eastern borders of the Pacific Ocean. In northern Siberia, at the mouth of the River Olenek, and in Spitzbergen, Triassic strata have been found with a characteristic marine fauna, including the following genera of cephalopods: Dinarites, Ceratites, Sibirites, Prosphingites, Popanoceras, Monophyllites, Xenodiscus, Meekoceras, Hungarites, Pitychites, Pleuronautilus, Nautilus, and Atractites; also species of Pseudomonotis, Oxytoma, Avicula, Pecten, Gervillia, Cardita, Lingula, Spiriferina, and Rhynchonella, together with remains of fish and reptiles (*Acrodus spitzbergensis*, *Ichthyosaurus polaris*, *I. Nordenskiöldii*).<sup>30</sup>

<sup>29</sup> Anzeiger Akad. Wien, No. xxiv. 20th Nov. 1890.

<sup>30</sup> A. E. Nordenskiöld, *Geol. Mag.* 1876, p. 741; A. Bittner and A. Teller, *Mem. Acad. St. Petersburg*, vol. xxxiii.; Mojsisovics, *Verhandl. k. k. Geol. Reichsanst.* 1886, No. 7.