

In the year 1846, Hauer's first monograph of the Cephalopods in the Hallstatt limestone appeared, and also a treatise by the same eminent author on the Molluscan marble of Bleiberg in Carinthia. Hauer demonstrated the identity of some of the species in these calcareous rocks with St. Cassian species, and thereby founded the knowledge of the younger horizons of Trias in the northern Alps. Further contributions by Hauer in 1847 and 1849 corroborated the great abundance of the Cephalopod fauna in the limestone rock in the neighbourhood of Hallstatt and Aussee, and showed that it was no less varied in its character than that of St. Cassian. The characteristic gastropods from the Hallstatt limestone were described by Hoernes.

Although Hauer's comparison of the fauna of the Hallstatt marble with that of the St. Cassian marls had given an indication of the age of this particular Alpine limestone, and had shown it to be unquestionably distinct from the Liassic limestone of Adneth, Morlot (1847) still regarded the Alpine limestone, in accordance with the earlier work of Murchison and Buckland, as Liassic or Jurassic. In a work otherwise very admirable in many ways, *The Explanatory Text of a Geological Sketch-Map of North-Eastern Tyrol*, Morlot entirely ignored all sub-divisions of the "Alpine Limestone" that had been previously attempted. The Geognostic Map of Tyrol, published in 1849 by the Mountaineering Club of Tyrol and Vorarlberg, merely differentiated lower, middle, and upper Alpine limestone, without assigning a definite age to any of the groups.

A general review of the literature and the position of geological research was written by Hauer in the year 1850, after the Imperial Geological Survey Department had been established in Austria. According to Hauer, the Alpine equivalents of the Bunter sandstones are the Werfen strata, the Sernft shales and conglomerates of the northern Alps, the Seis strata in South Tyrol, and the red sandstones and conglomerates in Carinthia and Carniola. A considerable part of the Alpine limestone belongs to the Trias; to the Lower Muschelkalk may be referred the so-called Isocardia limestone with "Dachstein bivalves" in the Salzkammergut, in Bavaria and Vorarlberg, and the Dolomite with *Cardium triquetrum* in the southern Alps. To the Upper Muschelkalk (or Keuper?) belong the marbled limestones of the Salzkammergut with Ammonites and Monotis, the Wengen, St.