

3. Slates, with intercalations of marble ;
2. Carboniferous series (with this Füchsel erroneously included the *Rothliegende*, or Lower Dyas) ;
1. Basal, or "Vein" series, forming the summits of the Harz and Thuringian forest, with erect strata.

Füchsel carefully observed and described the fossils characteristic of the *Muschelkalk*, *Buntsandstein*, the *Zechstein*, and other series.

Füchsel's great work, though it was unfortunately but little known during its author's life-time, became practically the model for the Wernerian School of geologists, and, more than any other individual work, laid the foundation of that rapid development of stratigraphical geology which began in Germany in the next generation. He gave to the geological formation a definite palæontological value, and also represented the surface outcrop of the several formations upon an orographical map by means of corresponding signs, letters, or numbers. Füchsel's geological maps were the first of the kind in Germany, and his text was further illustrated by detailed geological sections.

Professor Arduino,<sup>1</sup> in Padua, was the most brilliant of the early Italian stratigraphers. He was the first who sub-divided the stratified rock-succession into *Primitive*, *Secondary*, and *Tertiary* groups. His geological observations were made on the rocks of the Paduan, Veronese, and Vicentine districts and the neighbouring High Alps, and he gave an excellent exposition of the composition, surface outcrop, and order of superposition of the strata in the groups which he distinguished.

According to Arduino, the Primitive rocks are unfossiliferous, and consist of glassy, micaceous, strongly-folded schistose rocks, through which run innumerable veins of quartz. The *Montes secundarii* contain a great number of marine fossils, and are composed chiefly of limestones, marls, and clays. Arduino enumerates several minor groups within the Secondary series, and dwells at considerable length on the uppermost white and reddish limestones, the so-called *Scaglia* (Cretaceous

<sup>1</sup> Giovanni Arduino (1713-95) was Director of Mines in the Vicentine Province and in Tuscany, afterwards Professor of Mineralogy at Padua; he exerted a strong personal influence upon his colleagues in Italy and upon the many foreign geologists that came to Italy for purposes of study. His writings were very numerous and won him great repute. A list of them is given in the *Bibliographie géologique et paléontologique de l'Italie*, Bologna, 1881.