

formations). He remarks the huge blocks of granite and schist which bestrew the exposed surfaces of the *Scaglia* rocks, saying that they have been clearly carried here from Primitive rocks exposed in the neighbouring Tyrol. But it remained for a future age to penetrate the mystery of the transport of these massive blocks by ice. Arduino's *Montes tertiarii* consist of a younger and highly fossiliferous series of limestone, sand, marl, clay, etc., and he observes that the materials of these can in many cases be shown to have been derived from the Secondary series.

The volcanic rocks of Northern Italy were comprised by Arduino in a separate group, and their different origin was clearly pointed out; he included in the volcanic group not only true lavas and tuffs, but also the fossiliferous strata with which the volcanic rocks were interbedded. Arduino accordingly referred the origin of the volcanic group to recurrent eruptions and intermittent inundations of the sea.

The first coloured geological map was published by Gottlieb Gläser at Leipzig in 1775. Wilhelm von Charpentier published three years later the *Mineralogy of Chur-Saxony*, which ranks along with the works of Lehmann and Füchsel as a classic in the early geological literature of Germany. The distribution of the principal rocks and formations is shown by means of colours on a large map, and the occurrence of the less important rocks, of mineral veins and volcanic dykes, is indicated by various signs.

Charpentier grouped granite, gneiss, mica schist, porphyry, and limestone together as a basal formation belonging to one and the same geological epoch. Above this basal formation Charpentier distinguished argillaceous schists and slates, and the greywackes of the Carboniferous series; then the Flötz, or ore-bearing group, which he sub-divided according to Lehmann and Füchsel.

Some years later, by the discovery of Goniatites and fossil plants in the slates and greywackes, Von Trebra, an overseer of mines, was able to confirm Charpentier's conclusion, that the true position of these rocks in the succession was above, and not along with the basal formation.

While the foregoing authors were conducting stratigraphical researches in special localities, others were endeavouring to enlarge our arena of knowledge by means of travel and by observations of a more general character extended over wide