

mountains were not, as Werner had supposed, the oldest rocks, since they rested locally upon the gneiss and schist series, and even upon the strata of the "transitional" series. Similar observations had been made by these authors in the Harz mountains, and corroborative reports began to appear in other countries disproving the commonly accepted dogma that all occurrences of granite must of necessity be of the highest antiquity.

In comparison with Middle and North Germany, geognostic research was very backward in South and West Germany, notwithstanding the fact that these areas are particularly rich in fossils, and have in later times very materially assisted in developing our knowledge of past epochs.

The first to examine the rocks of the Old Bavarian provinces was Mathias von Flurl (1756-1823). At the age of twenty-four Flurl was elected Professor of Physics and Natural History in the Industrial Academy at Munich; afterwards he studied for a time under Werner. On his return to Bavaria, he was advanced from one position to another, and from the year 1800 occupied the post of Director of Mines. His chief work, *A Description of the Mountains of Bavaria and the Upper Pfulz*, was written in the form of letters. Pre-eminence was given to matters concerning mines and metallurgy; at the same time, he related in simple narrative style what he had seen of any geological interest in the course of his travels, mentioned the localities where fossils occur, and noted the surface distribution of different kinds of rock. But Flurl avoided all reference to debatable points, such as the order of the succession of rocks, the relative age of fossils, or the mode of origin of the rocks. The work was accompanied by a small general map of Bavaria, wherein a few of the leading varieties of rock were distinguished—granite, gneiss, schist, limestone, sandstone, nagelflue, and alluvium.

Flurl was thus the pioneer of geology in Old Bavaria, and his work has a permanent value on account of its reliable and varied information. On the other hand, it cannot be placed on the same scientific platform as the more special contributions to geology made by his contemporaries in Northern Germany.

B. *Austria-Hungary and the Alps*.—A foundation had been constructed for the geological investigation of Austria-Hungary