

*Text-books and Handbooks of Geognosy and Geology.*—The Text-books of Geology which appeared during the period between 1790 and 1820 showed an improvement on the speculative works of the preceding periods by their more matter-of-fact treatment of the subject. They may be taken as a standard of contemporary knowledge on geological subjects, and deserve special mention.

Most of the German text-books during this period were simply repetitions of Werner's teaching. As a rule mineralogy and geognosy were combined in the larger text-books, but in a few cases geognosy was published separately. Voigt's *Practical Knowledge of Mountains* (Weimar, 1792) was one of the best known, and it differed from Werner's teaching on several important points, such as the origin of basalt and the causes of volcanism. On this work Dietrich L. G. Karsten in great measure based his *Mineralogical Tables* (1800), which had a wide circulation.

The most complete and trustworthy text-book founded on Werner's teaching was that by Franz Ambros Reuss (Leipzig, 1801-6), in which six volumes are devoted to mineralogy and two to geognosy. The first volume of the geognosy or geology begins with a short introduction on the compass and domain of geognosy and the method of geognostic study. The first chapter treats the earth as a whole in its relation to other bodies of the universe, and states the most important facts of astronomy and mathematical geography. A second chapter is devoted to physiographical matters, the present constitution of the earth's surface and atmosphere, and the changes wrought on the earth's surface by existing natural agencies. The third chapter is occupied with the solid crust, describes the various kinds according to their composition and structure, their age and origin, and gives an account of the hypotheses concerning the origin and development of the earth. The rocks are sub-divided in five "formation suites," according to Werner. The fourth chapter contains a very full description of the regional masses of rock extending through mountain-systems or over wide areas. These are enumerated in the order of the "formation suites," and a careful account is given of their composition and texture, stratification or jointing, geological age, origin and occurrence, and the fossils or ores contained in them. A special chapter on metalliferous ores concludes this work, the contents of which show that the