

latter made it their chief desire to keep strictly to an account of known geological facts, Breislak throughout his work concerned himself mainly about the causes of geological phenomena. And the reactionary influence of Breislak's work proved so far healthful ; but chemistry and physics were still too little advanced to permit of an adequate solution of most geological phenomena, and ingenious as Breislak's conceptions were, they were seldom correct, and led him often far astray. The best part of the work is the third volume, in which Breislak gives a good account of volcanic phenomena and volcanic rocks in Italy, and contributes a number of valuable observations on gaseous explosions, volcanic ejecta, and on lava and basalt.

#### FOURTH PERIOD—NEWER DEVELOPMENT OF GEOLOGY AND PALÆONTOLOGY.

The leaders of thought, whose activities towards the close of the eighteenth, and in the first twenty years of the nineteenth century, won for geology an acknowledged place as a scientific study, were almost all of them men of independent means. Only a limited number of the founders of geology and palæontology belonged to teaching bodies. The universities were unwilling to countenance young and indefinite sciences, and only tardily incorporated them in their academical curricula. But when one after another of the universities recognised geology and palæontology, the result could only be beneficial, and that rapid progress began which has continued uninterruptedly to the present day.

Collections of rocks and fossils were started in all university towns, and laboratories and institutes were founded and equipped in order that beginners in the study might have every assistance in their work, and that the more advanced students might be given every inducement to follow out selected lines of original research. The number of students steadily increased, the output of special papers became more voluminous, and every year the subject-matter of the collegiate course became more comprehensive.

At first the universities, more especially in Germany, where Werner's system was the supreme precedent, placed the newer branches of geology and palæontology under the care of the