

took more definite shape in the detailed investigations of Cuvier, Brongniart and Smith, and how many more years were needed before the Secondary and Tertiary formations were definitely arranged and subdivided as they now stand in our tables. Remember too that even after the principles of stratigraphy had been settled, a quarter of a century had slipped away before they were successfully applied to the Transition rocks, and a still longer time before the system of zonal classification was elaborated. Note how long the controversy lasted over the origin of basalt, and how slowly came the recognition of volcanic action as a normal part of terrestrial energy, which has been in operation from the earliest geological times and has left its memorials even in the oldest known parts of the crust of the earth. Mark also, in the history of physio-graphical geology, that though the principles of this branch of science were in large measure grasped by Desmarest, De Saussure and Hutton in the eighteenth century, their work was neglected and forgotten until the whole subject has been revived and marvellously extended in our own day. Again, let me recall how slowly the key that now unlocks the innermost mysteries of rock-structure was made use of. Five-and-twenty years elapsed after William Nicol had shown how stony substances could be investigated by means of the microscope, before Mr. Sorby called the attention of geologists to the enormous value of the method thus put into their hands. Other five years had to pass before the method began to be taken up in Germany, and a still longer time before it came into general use all over the world.