

How have things come to be what they are? What is their history¹ in time?

4.
Leibniz's
'Protogæa.'

The first great philosopher of modern times who seems to have approached the question of the genesis of the objects of nature in the modern scientific spirit was Leibniz, who, in composing his local history of the origin of the Guelphs and the antiquities of Brunswick, pushed his researches into prehistoric times and made use of the geological and mineralogical data supplied in the Harz forest and mountains to arrive at conjectures as to the past history of the earth. His ideas, based upon local facts and observations on stratification and fossil remains, were collected in a famous tract entitled 'Protogæa,' which during his lifetime was only known in abstract,² and was published in 1749, many

¹ Although the word "genesis," through its use in the Scriptures, has acquired the meaning of a narrative of the origin or beginning of things, this meaning is not necessarily implied in the word *γενεσθαι*, and the genetic view of nature, or things in general, may limit itself to the study of observable, actual change, renouncing altogether the question of origins. The German words, "werden" and "geschehen," are in this respect less ambiguous and less ambitious, and many philosophers may accordingly prefer "evolution" to "genesis."

² On the connection of Leibniz's genetic studies with his History of Brunswick, which expanded under his hands into the 'Annales imperii occidentis Brunsvicensis' (edited by Pertz in the first three volumes of 'Leibnizens Gesammelte Werke,' Hannover, 1843-47, 4 vols.), see the introduction by Scheidt to his complete edition of the 'Protogæa,' Göttingen, 1749

(reprinted in the second volume of Dutens' 'Leibnitii Opera Omnia,' 1768); the words of Leibniz himself in the 'Plan' of his History (quoted by Pertz, vol. i. p. xxiii): "Præmittetur his annalibus quædam dissertatio de antiquissimo harum regionum statu qui ante historicos ex naturæ vestigiis haberi potest"; the address of Ehrenberg, 'Ueber Leibnitzens Methode' (Berlin, 1845); the account in Guhrauer's 'Life of Leibniz' (1846, vol. i. p. 205, and an interesting note in the appendix). Fontenelle, who knew of the 'Protogæa' only by the abstract (ed. 1693) in the Leipsic 'Acta,' and from correspondence with Eckhardt, Leibniz's executor, says in his 'Eloge de Leibniz': "Il la [viz., the History] faisait précéder par une dissertation sur l'état de l'Allemagne, tel qu'il était avant toutes les histoires et qu'on pouvait le conjecturer par les monuments naturels qui en étaient restés; des coquillages pétrifiés dans les terres,