

different in their mental attitude, the two men agreed in looking for the advancement of natural science in an understanding of the simpler, unspecified, and undifferentiated forms or stages of existence out of which they conceived the more complex to have grown or developed by a process of specialisation or differentiation. Many other naturalists and philosophers contributed, partly independently, partly through the influence of Lamarck's systematic and von Baer's embryological labours, to elaborate the same view and strengthen the same tendency of thought and research. Nor were there wanting suggestions as to the ultimate philosophical drift of the line of reasoning. It is doubtful whether these speculations, like those of Oken in his 'Physio-philosophy,' did not retard rather than promote the acceptance of the genetic view by scientific thinkers:¹

¹ On the position of Goethe and Oken in the history of the genetic view, see Carus, 'Geschichte der Zoologie,' p. 723; von Baer, 'Reden und wissenschaftliche Abhandlungen,' Bd. II. p. 258, &c. Both consider Lamarck as the real originator of a scientific theory of Descent. Von Baer gives an amusing account of the extent to which, as early as 1829, actual genealogical trees were given in Jacob Kaup's 'Skizzirte Entwicklungsgeschichte und natürliches System der Europäischen Thierwelt.' Von Baer sums up his historical account in the following words (p. 264): "In general I believe that at that time, when the succession of different animals and plants in the history of the earth—and generally from imperfect to more perfect organisms—occupied the thoughts of naturalists, and when, at the same time, the study of development of single

organisms had taken a new start, the notion of their Transformation was pretty generally accepted." The view expressed here by von Baer would probably have to be limited to German naturalists at that date. It must, however, be admitted that the fairest exposition and criticism of the arguments of Lamarck at that early date is probably to be found in Lyell's 'Principles of Geology' (vol. ii. Bk. III. chap. i. to iv.) He there also considers the arguments derived from embryology as contained in the researches of Thiedemann, confirmed by Serres ('Anatomie Comparée du Cerveau,' 1824), and comes finally to the result that—1. "There is a capacity in all species to accommodate themselves." 2. "That the mutations thus superinduced are governed by constant laws." 3. That "some acquired peculiarities of form, structure, and instinct are