and plausible enough, but there remained the last stronghold of the older view, the existence of definite forms of animal and vegetable life. Were these to be merely classified and reduced to separate types, as the morphological view was contented to reduce them, or was the growing evidence of variability to be interpreted in favour of a gradual development of the higher out of the lower and simpler forms of life? Above all, how was the highest type of all, man himself, to be regarded in such a comprehensive scheme of development? In Germany many great naturalists[1] were quite prepared for a consistent genetic or developmental view of nature; in France at that time the question was not agitated at all, the suggestive writings of Lamarck and St Hilaire having been

26. Genetic view in Germany and France.

[1] This does not refer to the earlier writings of Goethe, Oken, Treviranus, and others, whose merits, since the appearance of the 'Origin of Species,' have been variously estimated by Huxley in England and by Haeckel in Germany: their speculations had, with the generalisations of the 'Naturphilosophie,' been swept away by the inductive school represented in botany at that time by von Mohl, Nägeli, and Hofmeister; in zoology by the embryological school with von Baer at its head. Of W. Hofmeister (1824-1877), whose labours begin about ten years before the appearance of Darwin's great work, Julius Sachs says: "The results of his 'Comparative Researches' (1849 and 1851) were magnificent beyond all that has been achieved before or since in the domain of descriptive botany, . . . the conception of what was meant by the development of a plant was completely changed, . . . the reader was presented with a picture of the genetic connection between cryptogams and phanerogams which could not be reconciled with the then reigning belief in the constancy of species. . . . When, eight years after Hofmeister's 'Comparative Researches,' Darwin's theory of descent appeared, the affinities of the large divisions of the plant-world lay so openly, so deeply founded, and so clearly before the eyes of students of nature, that that theory had only to recognise what had been made evident in this line by genetic morphology" ('Gesch. d. Botanik,' p. 215, &c.) In another direction Nägeli, by his mechanical theory of "the growth and internal structure of organisms," which he reduces to "physical, chemical, and mechanical processes" (1860), fell in with Darwin's attempt to "reduce the earlier purely formal consideration of organic structures to a causal (genetic) view" (ibid., p. 373).