

as "mutations." Darwin had recognized the appearance of such occasional sudden changes in features of plants or animals, but had called them "sports," and had thought them of little importance.

Most mutations are detrimental, and leave little trace in succeeding generations, though occasionally one occurs that is beneficial. Hugo De Vries, one of the three independent rediscoverers of Mendelism, built upon this fact a theory of "saltations," or "macro-mutations," which was very popular for a few years. According to his theory the various types of life have come into existence through a series of great sudden changes, whereby an animal or plant would produce an offspring extremely different from itself, thus making a great leap (or saltation) forward in one step.

This idea of De Vries was not altogether new. Even before Darwin wrote his Origin of Species, Geoffroy St. Hilaire (1772-1844) had suggested the possibility that evolution might occur through sudden great changes, such as a bird being hatched out of a reptile's egg, thus making the great transition from reptiles to birds in one giant leap. Between 1860 and 1864 other naturalists again proposed similar theories, but Darwin refused to accept them, questioning whether such saltations, if they should occur, would have much effect without the oversight of a human breeder, because of the probability of blending inheritance.

To De Vries, however, the theory of saltations seemed to be the solution to the problem of maintaining evolution while recognizing Mendelism. He was hailed as "a second Darwin" and his lectures in Europe and in America were received with great enthusiasm. Then other biologists began sharply to criticize the whole idea of saltations, pointing out that the occurrence of such great changes was largely hypothetical, and no observational proof was available. In a short time the great enthusiasm for De Vries' theory disappeared so completely that today some of the introductory books on Genetics hardly bother even to mention his name.