

Discontinuous Variation Encyclopedia Article

Discontinuous Variation by Robin Cook

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Discontinuous Variation

Discontinuous variation is variation within a population of a characteristic that falls into two or more discrete classes. Classic examples include such things as eye color in animals and the tall and short pea phenotypes used by Austrian botanist Gregor Johann Mendel. Characteristics that display discontinuous variation are present in one state or another; there is no blending or merging of the different forms possible. Unlike continuous variation, discontinuous variation is displayed by characteristics that are usually controlled by only one or two genes and that have little or no environmental component in their expression. For example, height in humans is a characteristic that shows continuous variation. The maximum height an individual can grow to is governed by the genes controlling the system as well as the intake of food. Thus, an undernourished individual is unlikely to achieve maximum height potential. With eye color, a person's eyes will be a certain color irrespective of any external factors operating. This type of variation is sometimes known as qualitative variation. Discontinuous variation can be produced by a single gene mutation or it can be evidence of a polymorphic gene system.