

突变的必然性与偶然性 二评莫诺的《偶然性与必然性》

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摘要 莫诺在他的《偶然性与必然性》一书(161里)既然十分肯定不变性是生命的最基本的属性,他怎样解释生物的进化呢?他怎样解决生命自然界中不变和变之间的矛盾呢?他提出偶然进化论来解决这个矛盾。他认为不变是生命的本质和规律,变则是可有可无的;而变的基础是偶然性,而且是单纯的偶然性。他指出,作为生命不变性的分子基础即去氧核糖核酸(DNA)虽然会异常精确地复制自己,但有时也会由于物理作用而出现分子的“噪声”即遗传分子发生某些紊乱,由此产生突变;而突变基因又会同样精确地复制自己,从而出现遗传的变异。他说:“至少某些紊乱会引起DNA分子中碱基排列顺序的明显改变。由于DNA转录机制的盲目的忠实,这种转录的错误会自动地进行生殖。它们会同样忠实地按照突变所引起的DNA片断,翻译成改变了氨基酸排列顺序的多肽链。”(第109页)而由此引起的新陈代谢的改变,会引起变异。这就是说,依他看来,变异产生的顺序是这样:DNA分子的偶然紊乱,引起突变,突变导致变异。

关键词

分类号

NECESSITY AND CHANCE IN MUTATIONS A SECOND CRITICISM ON MONOD'S CHANCE AND NECESSITY

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Abstract

According to Monod, the so-called reproductive invariance of living beings rests on the reproduction of invariant informations stored in the genetic material DNA, and the initial elementary events which open the way to organic evolution are microscopic changes or molecular disturbances which result in mutations. So he insists that it is chance that is the basis of mutations and organic evolution. The present writers disagree with this metaphysical point of view and point out that Monod's reasoning is very superficial. According to the present writers, the ability of genes to mutate rests on the divisibility of the genetic material. Without this fundamental property no gene can change. As we now know, the genetic informations consist of genetic codes each of which is made up of three "letters". These "letters" are chemical compounds which can react with suitable agents happened to be present in the surrounding environment. If the genetic material is not divisible and possesses no property of mutability, there will be no mutation at all. As the genetic material contains definite and mutable informations, it will sooner or later result in mutations. That is to say, that the genetic material will undergo changes is a certainty. So the basis of mutations is necessity and mutation happens under the control of natural laws. According to dialectical materialism, necessity and chance are inter-related and intertransformed under certain circumstances. There is neither pure necessity nor pure chance. Mutations as a phenomenon appear to be accidents which are expressions of underlying laws operating on the genetic material. So the accidental is necessity, and necessity is also accidental.

Key words

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