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Q:- Write Notes on NEO-LAMARCKISM.

Answer:- Lamarckism, or Lamarckian inheritance, also known as "Neo-lamarckism", is the notion that an organism can pass on to its offspring physical characteristics that the parent organism acquires through use or disuse during its lifetime.

Neo-lamarckism :-

neo-lamarckism Modern evolutionary theories that in some sense allow the possibility that acquired characteristics may be inherited (as proposed by Lamarck). For example, in 1980 E.W. Stole is Lamarckian evolution may occur by the

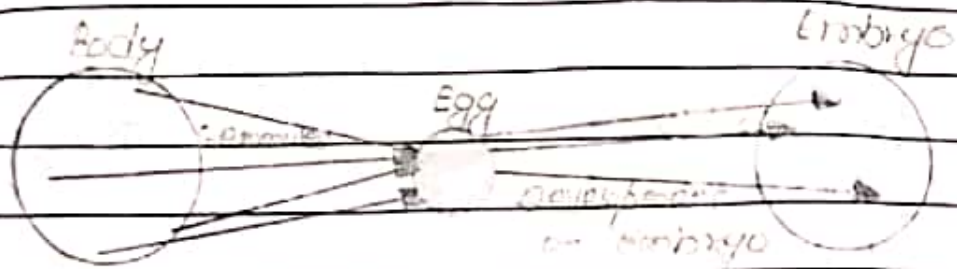
insertion of new genetic material into the host genome by a retrovirus.

Lamarckism, or Lamarckian inheritance, also known as "Neo-Lamarckism", is the notion that an organism can pass on to its offspring physical characteristics that the parent organism acquired through use or disuse during its lifetime. This idea is also called the inheritance of acquired characteristics or soft inheritance. It is inaccurately named after the French biologist Jean-Baptiste Lamarck (1744-1829), who incorporated the action of soft inheritance into his evolutionary theories as a supplement to his concept of orthogenesis, a drive towards complexity. The theory is cited in textbooks to contrast with Darwinism. This paints a false picture of the history of biology, as Lamarck did not originate the idea of

soft inheritance, which was known from the classical era onwards, and it was not the primary focus of Lamarck's theory of evolution. Further, in *On the Origin of Species* (1859), Charles Darwin supported the idea of "use and disuse inheritance", though rejecting other aspects of Lamarck's theory. Darwin's own concept of pangenesis implied soft inheritance.

Many researchers from the 1860s onwards attempted to find evidence for Lamarckian inheritance, but these have all been explained away, either by other mechanisms such as genetic contamination or as fraud. On the other hand, August Weismann's experiment is now considered to have failed to disprove Lamarckism as it did not address use and disuse.

Darwin's Pangenesis :-



Charles Darwin's *On the Origin of Species* proposed natural selection as the main mechanism for development of species, but did not rule out a variant of Lamarckism as a supplementary mechanism. Darwin called this pangenesis and explained it in the final chapter of his book *The Variation of Animals and Plants under Domestication* (1868), after describing numerous examples to demonstrate what he considered to be the inheritance of acquired characteristics. Pangenesis, which he emphasised was a hypothesis, was based on the idea that somatic cells could, in response to environmental stimulation (use and disuse),

throw off 'gemmules' or 'pangenes' which travelled around the body, though not necessarily in the bloodstream. These pangenes were microscopic particles that supposedly contained information about the characteristics of their parent cell, and Darwin believed that they eventually accumulated in the germ cells where they could pass on to the next generation the newly acquired characteristics of the parent.

Darwin's half-cousin, Francis Galton, carried out experiments on rabbits, with Darwin's cooperation, in which he transfused the blood of one variety of rabbit into another variety in the expectation that its offspring would show some characteristics of the first.

