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Neo-Lamarckism:

The followers of Lamarck have attempted to revise the Lamarckian concept of evolution by contributing their own ideas to it. This revised theory of Lamarck is known as Neo-Lamarckism. It has been supported by Huxley, Puckard, Spencer, Cope, Osborn, Cannon etc. As to Neo-Lamarckism although the inheritance of the effects of use & disuse have not been proved. It has also not been shown that possibilities are not there. The supporters of Neo-Lamarckism have utilized the discovery of hormones. They say that just as the sex hormone secreted by sex gland brings about changes in somatic cells to produce the external influences of the effects the somatic cells can stimulate the body cells to produce specific secretion which is then reach the sex cells through blood.

Such variations can easily be inherited by offspring. It is known that X-rays can affect the germ cells. Tower has experimented with potato beetle and shown that the effect of environment on the germ cells, producing any change in somatic cells. He exposed their potato beetles to varying degree of moisture & temperature, when the reproductive organs were developing in them. The beetles themselves were unaffected but the offspring exhibited conspicuous variation in colour & pattern which were inherited.

Jenning's Experiment:

Jenning made many experiments upon Ascaris - decimus. He noted that if the environment was changed that characters had modified & if again the original environment was provided

the modification disappeared.

Sumner's Experiment (Sumner's)
A/c to F.B. Sumner, if the temperature is raised to 30°C, the white mice would develop longer hind legs, tail & body, and if they are allowed to mate at lower temperature, their offspring showed the longer size & proportions indicating the transmission of the character.

Kammerer's Experiment:

Kammerer worked on *Proteus anguinus* (an amphibian) living in underground cave water in complete darkness. It has vestigial eyes covered over by skin. It is also colorless. On bringing the animal to daylight, the animal develops color & normal eyes and these characters are transmitted to their offspring.

Mc. Duggan's Experiment:

Mc. Duggan trained white rats to escape from a tank of water by certain route. In his expt. rats were plunged in to a tank of water from where there were two ~~exit~~ exits, one lighted & other dark. A rat leaping by the lighted exit got an electric shock, while one leaping by the dark exit got no shock. Thus number of trials needed for a particular rat to learn always to select the dark exit formed a measure of its speed learning. These trained rats were then mated and their offspring in turn were taught the problem of escape. This was repeated for 44 generations. He found that there was a marked progressive decrease in the number of errors by white rats.

To prove the inheritance of acquired character
Geyor & Smith crushed the lens of rabbit
and enucleated it to form, which develop Antibodies.
The Antiserum of form was injected in to frog-
-nail-rabbit. Some of the offspring of rabbit were
born with defective eyes & this character was in-
-herited in successive generation. The above facts
clearly indicate that there is definitely something
in Lamarckian Theory. The modern view is only
those characters are inherited, which affects the
Germplasm, while others affecting Somatoplasm
are not inherited to their progeny.

The Appeal of Lamarckism has persisted, because
it seems that ~~was~~ many of the more remarkable
adaptations could have arisen only in direct
response to the environment or to needs of the
Organisms. These are phenomena in evolution,
which some believe to suggest that whatever may
be said against it, there is some truth in
Lamarckism of inheritance and it is possible that
in future, truth may be found in it & the
Neo-Lamarckians may be justified.

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