

Topic :- Inherent Behavior

In innate behavior, some external stimulus triggers a genetically determined response. Innate behavior is stereotyped and is almost exactly identical in every member of a population. It includes toxic responses or direct orientations in response to stimuli, reflexes, and instincts.

1.) Reflexes :- The simplest behavior in animals are reflexes. The reflex actions are fixed, stereotyped response to stimuli. These depend upon the reflex arc.

The counteracting of the pupils of the eyes in response to intense light and the familiar knee-jerk reflex arc are examples of reflexes in man. The reflex arc provides a short cut, avoiding the delay that would be involved if

impulses first had to travel to the brain, and the brain in response had to send out impulses to achieve action. Reflexes operate only so long as stimuli are present, and the reflex behavior affects only a portion of the organism.

2.) Taxes :- A taxis is the direct orientation of an organism in response to stimuli. It differs from a reflex in that the whole organism is involved in a taxis, whereas only a part may be involved in a reflex.

The orientation is said to be positive if it is in the direction of the stimulus, negative if it is away from the stimulus. For examples, Euglena will move towards weak light, but away from strong light.

Vorticella will rapidly contract its stalk when touched. Paramecium, swimming in a spiral fashion, will halt abruptly and back up when it encounters a droplet of lower pH. Both ants and bees utilize toxic responses in returning to the hive or nest. The orientation of the grayling butterfly is of adaptive value which always flies towards the sun into its escape from predators. The butterfly orients to the sun by turning to that position in which both eyes are equally stimulated. Thus its movement is unidirectional, putting as much distance as possible between it and the predator. If the butterfly is blinded in one eye, it will fly around in circles making it much more vulnerable.