Prof ANIL KUMAR (Zoology)
B.Sc HONS Part-III Paper-VII
Topic: Describe the phenomenon of colouration and Mimicry.
Prof ANIL KUMAR
Associate Professor Zoology
R.R.S College MOKAMA P.P.U

Q. 6. Describe the phenomenon of colouration and mimicry.

Ans. According to Fisher (1936) "evolution is progressive adaptation and consists of nothing else." Adaptation is omnipresent. Successful and centinuous existence of any species demands good adaptations. Colouration and mimicry are two aspects of adaptation and hence evolution.

1. Colouration

Coluration is a bilogical phenomenon where the animals develop different colours and colour patterns for protection, warning, frightening the enemies capturing prey. Recognizing mates and so on.

Nature of colour : The colour effects in animals and plants is caused by two factors, namely physical and chemical factors. The physical factors are refraction and difraction. Chemical factors causing colouration are pigments. The pigments include melanin. Carotein, ptevin etc.

Type of colouration : On the basis of the purpose of colouration, it is divided into the following types—

1. Protective colouration : In this type the animals develop colour patterns to conceal themselves from the predators. It is also called concealing colouration.

Examples : A small spider when frightened, rolls on itself to expose it abdomen and in this attitude, it looks like the empty head capsule of an ant. As the spider lives near the ant's nest where such capsules are common, this device is very effective.

2. Aggressive colouration : Here the animals divelop colour pattern to threaten or frighten other animals. The eyed Hawk moth, smerinthus ocellatus uses the eye-spots to threaten the predators.

3. Warning colouration : Urtain animals are provided with certain unpleasant or dangerous attributes like unpleasant taste, unpalatability, poison, abonoxious odour, sting and so on. These animals are conspicuously coloured and they advertise thein unpleasant or dangerous attributes to the predators.

The viruory buttertly is edible and resembles in colour pattern the monarch butterfly.

2. Mimicry

Mimicry is defined as the resemblance of one organism to another or to any natural object for the purpose of concealment, protection or for some other advantage.

Mimicry is classified into following types :

(1) Protective mimicry : When mimicry offers protection to the mimic, the mimicry is called protective mimicry.

The stick insect or walking stick mimics exactly the twings.

(2) Warning mimicry : There are some harmless or palatable animals which mimic the harmful or non-palatable animals. By this the mimics warn the enemies and protect themselves.

The non-poisonous ptyas mimics the poisonous cobra by producing a hissing sound.

(3) Aggressive mimicry : In this type the mimics possess some lure to attract the pray. For example, it is predator resembles its prey, that predator may be able to approach its victim more easily than it could otherwise do.

(4) Mullerian mimicry : It is based on the observations made by Muller (1879). In this type two or more species with an unpleasant or dangerous attitude resemble each other for the purpose of protection.