# SUBJECT CPT 4.2 ANIMAL BEHAVIOUR TOPIC :COMPLEX BEHAVIOUR TUMKUR UNIVERSITY

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• INTRODUCTION: Complex behaviour is also called as instinct or innate behaviour. All of the behaviours shown by the animals are natural example cats are natural born hunters they don't need to learn how to hunt. Spider spin their complex webs without learning how to do it from other spiders. Birds and wasps know how to build nests without being taught. These behaviours are called as innate. Innate behaviours are also predictable. All members of a species perform an innate behaviour in the same way.

Animals show many types of complex behaviour

- 1. Courtship and mating in animals.
- 2.Parentalcare.
- 3. Nesting behaviour.
- 4. Webweaving.

#### **COURTSHIP BEHAVIOUR:**

The term courtship refers to the behavioural interactions that occurs between males and females before, during and just after the act of meeting. Different animals shows different type of courtship behaviour from invertebrates to vertebrates.

Examples :-

Mating in spiders (Arachnids)

Spiders are predatory animals they are ready to kill and eat the animals of small size that come within their range. Female spiders are cannibalistic too. So mating in spiders is difficult and quite dangerous from the male who is smaller and weaker. Under these circumstances, male courtship behaviour are dual functions. It stimulates females sexually on one hand and suppresses females nonsexual behaviour on other hand. Male spiders approaches the web of a female sitting at the centre of web and pluck a thread of the web at the species specific frequency. In some species spiders present the female with a nuptial gift in the form of an insect wrapped in silk. The male plucking serenades the female and recedues her natural aggressive manner so enabling male to approach her and mate her.



# 2. Mating in Scorpions

In Scorpions the male not only stimulates the female sexually but he has to suppress the non sexual behaviour of the female so that she may not eat him. In ethological terminology, the function of the courtship is to provide releaser stimuli which block hunger drive. In Scorpions, courtship takes the form of a dance called PROMENADE A DEUS by fabre. On finding suitable mate the two scorpions stand face to face with their tails upraised and move about in circles. The male then seizes the female with his pedipalps, and together they walk backward and forward. The behaviour may lasts from 10 minutes to hours, depending on how long it takes to locate a suitable site for spermatophore deposition, the male deposites a spermatophore which he attachs to the ground. A wing like lever extends from the spermatophore. The male then manoeuvres the female so that her genital are is over the spermatophore. Pressure on the lever of spermatophore releases the spem mass, which is taken up into female orifice. Thus in scorpions, coitus does not occur.



Courtship behaviour in fishes: (three spined stickleback) The male is stimulated into courtship behaviour by two stimuli the swollen abdomen of the ripe female and a particular posture when the female faced head upward at a 45\* angle .these stimuli encourage the male to go through a zig zag swimming pattern chasing her and leading her to nest he has built. This in turn stimulates the female to swim toward the male. The male again then swim toward the nest and female follows the male shows the nest to the female and she enters. The male trembles and the female lays her eggs. He then promptly chases her off return to nest to ejaculate his sperms over the eggs, producing fertilization. then male spends days fanning oxygen laden water over them until they hatch.



## **PARENTAL CARE:**

• Looking after the eggs are the young until they are independent to defend themselves from predators is known as parental care. In other words parental care is any action or complex behaviour performed by the parents towards its offspring (keenleyside and Reese, 1978). Animals exhibit a great diversity in care of their eggs and youngs during development.

# PARENTAL CARE IN INSECTS

Exclusive male parental care is very rare among animals but common in fishes and certain insects such as water bugs in which occur back brooding. In *Belostoma* flumineum males take care of eggs that their mates lay on their backs. Such males spend much of their time keeping the eggs near the water surface, pumping their bodies to keep relatively aerated water moving over the eggs. Which they also stroke at intervals with their hind legs.



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#### PARENTAL CARE IN AMPIBIANS

- Perhaps no group shows more diversity in parental care than do the amphibians. Anurans show much greater diversity that eurodeles and apodans.
   Parental care is associated only with those species that place their eggs in single clusters. The methods of parental care by amphibians generally fall under two broad categories.
- Protection by nests
- Direct caring by parents





• Parental care in reptiles: Internal fertilization and terrestrial reproduction are fully developed among reptiles. Few eggs well supplied with yolk may be carried inside the mothers body until they hatch or they may be placed in nest buried in the ground and given little subsequent care.



#### PARENTAL CARE IN BIRDS

- NEST CONSRUCTION; most bird species build nest that is structure in which the eggs are laid and then incubated. Some lay their eggs directly on sections of narrow rocky ledges and debries. A majority of species of birds build true nest which range in complexity from simple collection of sticks.
- CARE OF THE YOUNG ONE
- The young one birds at the time of hatching are two types.
- 1.precocial
- 2.altricial
- Their care includes feeding, guarding, protecting them against the sun and rain.



• Parental care in mammals: In mammals parental care is found most commonly in primates, rodents and canids. The california mouse is a monogamous rodent that exhibits extenive and essential parental care.







# • Conclusion:

• Complex behaviour results the innate behaviour ,these are genetically hardwired like hunger when you are without food or pain when your foot is stepped on .it gives information about the stereotyped and searching behaviour. These are rigid type where it involves various organs are working together at a time .complex behaviour gives the information about their life cycles and habitats.

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