a) Anoestrous.

Anoestrous means absence of heat period. It may be due to pathological or physiological reasons. Anoestrous may occur due to morphological, functional or environmental factors. For example, hypoplastic (under developed) ovaries are morphological defects, which are congenital and associated with anoestrous. Normal imbalance or defective response to hormones is a functional problem causing anoestrous. In seasonal breeders, ovaries remain inactive during the unfavourable season most probably through a functional mechanism. Extreme nutritive deficiency can cause reproductive problems again probably by causing disturbances in the functional mechanism. Inactive ovaries are then the result of such disturbances.

Anoestrum may also occur when there is some uterine infection. As a result, the corpus luteum fails to regress and remains persistent, thereby stopping the cycle. Anoestrum should be distinguished from silent heat and faulty detection of heat. Improper detection of heat is one of the major causes of longer inter calving period. As mentioned earlier, individual differences are significant in the manifestation of heat symptoms.

b) Abnormal discharge

The nature of discharge depends upon the health of the genital organs as well as the physiological state of the cow. Discharges may be distinguished as normal or abnormal depending on the physiological status of the cow.

A cow in heat has discharge that is colourless, thin and of ropy type hanging from the vulva, whereas a cow in proestrous has a more watery type of discharge. During metoestrum, the discharge turns cloudy and stickier and sometimes, blood mixed (Metoestral bleeding). Greyish brown discharges from vulva during pregnancy are often seen and hence need not be considered abnormal. During calving, a thick discharge comes out first followed by a large quantity of watery discharge (amniotic fluid). It is also normal to have bloody discharges few days post partum, which later turn straw coloured. (By about 10-12 days). Mucopurlent or purulent discharge at any time is an indication of genital pathology. Unnatural discharge is to be distinguished considering the physiological status of the cow. For example, blood-tinged discharge at any time other than during metoestrum and few days post partum is pathological. A cloudy discharge during heat is pathological but is normal during metoestrum or pregnancy. During chronic inflammatory conditions, white flakes are commonly seen along with a discharge. The condition is clearer during oestrum.

c) Short irregular oestrus cycle or continuous heat.

Irregular and short duration heat period is a problem commonly associated with functional problems like cystic ovarian degeneration. Continuous heat occurs very often when follicular cyst is present on the ovaries. This condition is termed as **nymphomania.** A **cyst** is an over ripe

follicle that has failed to burst. Hence ovulation does not take place and the follicle remains in the ovary, growing to a size. More number of cysts is also commonly found in this condition. A cystic cow continuously produces the hormone oestrogen, which apart from stimulating the animal to be always in heat relaxes the sacrosciatic ligament. The ligament sinks thereby elevating the tail's head and giving a hump like appearance. Vulval discharge may be continuous, copious, more tenacious and sometimes opaque. The vulva may be relaxed. Certain cows become aggressive and give the appearance of a bull.

The cystic ovarian degeneration is supposed to have hereditary predisposition. Certain cows may exhibit a mild form of heat during mid cycle. This is especially true when the cows are put to stress. This condition may be disregarded. Insemination during mid cycle heat is futile for the reason that this heat is not accompanied by ovulation.

d) Long irregular oestrous cycle.

Various reasons like uterine pathology, embryonic mortality etc., may contribute to this condition. Uterine pathology causes persistence of corpus luteum, preventing the animal from cycling. Heat is exhibited at longer intervals when there is embryonic death..

e) Repeat breeder

A **repeat breeder** is one, which has apparently normal genitalia and oestrous cycle but fails to conceive even when bred more than twice with a fertile bull. There can be several reasons for this condition. Apart from sub clinical uterine infection, functional problems and embryonic mortality, morphological problems also may result in this condition. Such animals need a detailed examination by veterinarians so that the problem could be identified. The following causes may also contribute to repeat breeding.

- Delayed ovulation: It may sometimes happen that the ovulation was delayed and by then, the aging of sperms inside the female genital tract might have taken place. Aged sperms are less capable of fertilization. Even if fertilization occurs, there are chances that the zygote might die.

- Adhesion of ovarian bursa: Due to infection, bursal membrane remains in adhesion with the ovary. Under such a condition, the fallopian tube is unable to catch the shed ovum.

- Fallopian tube block: Fallopian tube may get blocked due to various reasons. Hence, fertilization becomes impossible

- Failure of implantation. The fertilized ova fail to get implanted in the uterus in certain specific or non-specific disease conditions, functional disturbances etc.

f) Abortion

Abortion is the expulsion of foetus after it attains a recognizable size and before it reaches a viable age. This can happen at any stage of gestation. If an unnatural environment develops

during the embryonic stage, the embryo may get expelled or resorbed. This is termed **embryonic mortality**. Embryonic expulsion usually goes unnoticed. After abortion or embryonic expulsion it is usual that the cow exhibited no heat symptoms for some time. The farmer may assume that the cow was pregnant. Therefore watching the cow for any unnatural discharge is important in order to identify the condition and to take early steps for breeding the cow. **Premature birth** is the expulsion of a living foetus before term. The reasons for early embryonic death, abortion or stillbirth may be disease conditions or functional disturbances. In any of these situations it is advisable that a veterinarian examined the animal before it was bred further.

g) Dystocia

Dystocia is a condition in which parturition becomes difficult without external aid. To those who know about the science of parturition, most of the instances of dystocia are not complicated and can be helped with ease. Improper handling of dystocia is dangerous both for the cow and the young one.

h) Prolapse

Prolapse is the slipping or protrusion of any organ or part of an organ. Vaginal, cervical or uterine prolapse may occur due to various reasons. Competent technical help is necessary to reduce the condition.