

Another important factor must be borne in mind, viz: that where there is a strong development of parental affection and conjoint parental care for the young, an important additional reason exists for diminishing the necessity of special pairing seasons. This is all the more marked in the anthropidæ where, owing to a higher intelligence, individuals learn to combat the injurious influences of their environment and to make it possible for the offspring to have as good a chance of surviving at one time of the year as at another.

If then, there be found exceptional cases of special pairing season among the higher primates, it must be because natural selection has conserved the habit in relation to the special conditions in which those species are placed.

Among the reptilians and birds, the rule is that pairing occurs in the spring, and it is probable, that, as Westermarck points out, the worldwide association of the springtime with the awakening of sexual affinities has been based upon the observations made mainly on birds.

The modifications in the pairing season which can be induced by artificial means, *e. g.*, domestication, are a strong evidence in favour of the influence of external influences on reproduction among the higher vertebrata. Indeed, it is evident that just as rut becomes adapted to the requirements of separate species, so it may become altered in relation to the needs of individuals under varying conditions.

Another interesting fact must be mentioned viz: that while the rutting-period is practically the only time when the females will copulate with the males, the menstrual period is the time above all other periods when they will not engage in this act. This is universal among mankind and is true for the simiadæ as far as our observations go.

Moreover, the changes in connection with rut result among other things in softening and dilating the outer genitals for the reception of the penis, they being at other times in many animals too much constricted for this. It is well-known that a bitch will not generally allow the dog near her until the rut has been in progress for a time, *i. e.*, until the vulva and vagina are sufficiently dilated.

So far as our facts go, it seems likely that rut in the higher vertebrates is merely the expression of the force of sexual affinity necessary to ensure fertilisation of the ovum, which is found throughout the whole animal kingdom, diffusely spread in the lower forms, highly specialised and limited in the upper forms owing to the influences of environment and natural selection, and affecting both males and females alike. This participation of the males is important to bear in mind. It is found everywhere. Thus many fishes when the love period arrives put on brilliant colours, become vigorous and play about