

## Reproductive behaviour of short-eared elephant shrews

G.Vakhrusheva

Moscow Zoo

Short-eared elephant shrews (*Macroscrlides proboscideus*) have been kept at Moscow Zoo since 1991. During this period 96 young were reared to weaning age and now our colony consists of 20 individuals of fourth to sixth generation in captivity. During the last few years we have conducted a series of observations to study different aspects of their reproductive behaviour.

Sexual behaviour has been observed between three different pairs of shrews. All females showed an increasing of social activity several days before mating. At the same time individual distances between partners have reduced. In the day of mating females demonstrated specific behavioral pattern to attract a male. It consisted of approaching him with naso-nasal contact and following lordosis intention movement or lordosis position. When arching her back into a lordosis position a female displayed a raising of hair around the base of her tail. At first males were more passive than females, sometimes they followed them with short naso-anal contacts and mounting attempts. Females usually escaped from them. Gradually males' courting become more persistent and females remained immovable in lordosis position, permitting partners to mount them. We observed such behaviour approximately within 5 hours. This period ended with successfull mating. After mounting with ejaculation males displayed specific postcopulator posture visually similar to the lordosis expressed by the female. They also licked their genitalia and marked substratum by dragging the genital area. Sometimes after

copulation males were aggressive towards females. After a short rest females started to attract the partner again, males resumed their courting and the stage resulted in mating. All pairs of shrews showed during mating period three series ending with mounting with ejaculation. Then sexual activity of females decreased and they began to escape their partners. On the contrary the intensity of males' courting was increasing and they tried to detain females on the same place with their teeth.

Usually mating period was observed during night when animals were active. Males demonstrated elements of sexual behaviour for 7-10 days after mating.

Gestation in short-eared elephant shrews averages 61 days. A pregnant female bearing one cub weights approximately 56 g before parturition and 66 g if there are two of them. We succeeded in observing and videotaping an elephant shrew female giving birth. That day the female became excited, she was rushing about the cage, frequently lay down breathing interruptedly with her mouth opened widely. The male followed her with short naso-nasal contacts and mounting attempts. When contractions started we noticed that female's vagina was opening gradually and we could see a part of the foetus. When contractions have intensified they lasted from 2 to 15 seconds and started approximately every 30 seconds. The first infant was born about 25 minutes after contractions started. It immediately began to look for the nipple and to suck. At that moment female gave birth to her second infant. In both cases female didn't bite the umbilical cords off, they have broken off when she turned round abruptly. Then female carried both young into the nest-box. 2 hours later placentas were found in the cage, later the female ate them both.

To study parental behaviour we have conducted a series of daily observations on the group of shrews, consisting of adult pair and two young. The male didn't take part in rearing of offspring. The maternal behaviour consisted of suckling and of

carring newborns into the nest-box. Before nursing the female approached her cub and touched his back with her nose to stimulate him to suck. When the cub was looking for a nipple the female adopted a nursing position with her front leg apart and fore-quarters raised. Usually suckling lasted 30-40 seconds and was observed 4-5 times during night time. Sometimes after it the young shrew began to lick and to push mother's mouth. In return she opened her mouth and the child licked the belch. As young were growing up they began to initiate sucklings and the female sometimes was aggressive towards them. By 25 days of age the young were virtually independent of their mother and we separated them.

Sometimes we paired young shrews shortly after their separation from adult animals but the greater part of such pairs was broken later because of a male's aggression. Usually we introduced partners by the age of 6 or 7 months when they have attained sexual maturity. Only one 4 month old female has been observed mating and subsequently gave birth to young. Females usually experience a postpartum estrus after giving birth.

Basing on natural changes in the behaviour of paired animals we concluded that estrous cycle in females of short-eared elephant shrews is approximately 14 days.. Females are breeding till 5 years and may have some 11 litters in all. 70% of litters consist of 2 young. In our conditions elephant shrews breed all year round excepting December and January. Maximum of litters appears in April.