

## Breeding the African hedgehog

*Atelerix pruneri*

### in captivity

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A breeding colony of the African hedgehog *Atelerix pruneri* has been maintained in a laboratory at Adelphi University for the study of hedgehog behaviour since January 1976 when three adults and four juveniles were obtained from Togo through an animal dealer.

The hedgehogs were kept individually in glass aquaria (76 × 30 × 30 cm) or in wooden enclosures (118 × 59 × 40 cm), which were left uncovered, and maintained at room temperature under a 12 : 12 photoperiod. Each cage was provided with a cardboard box as a shelter which also served as a nesting box for ♀♀ with young.

The hedgehogs were given a diet of commercial cat food which was occasionally supplemented by small mice, crickets and mealworms. Contrary to reports by Watson (1951) the animals did not accept bread, fruits or vegetables. Occasionally, upon encountering a new food, a hedgehog would self-anoint with a mixture of the food and its saliva.

Captive hedgehogs are, for the most part, nocturnal but will come out during the day to feed or if disturbed. If handled as juveniles, some develop a placid disposition and become quite tame.

When threatened, they normally roll into a ball leaving only their back, which is covered with hard spines, exposed. Sometimes, however, instead of curling up, they put more force into the attack by erecting the spines over the head and lunging or 'boxing' by extending their legs.

Another defensive behaviour, one which increases the effectiveness of the spines, is self-anointing; when a hedgehog encounters distasteful or irritating substances such as toad skin, tobacco, soap and faecal matter, it chews it and then licks the saliva-substance mixture onto its spines. Herter (1971) described this behaviour but did not offer an explanation; it

was later determined (Brodie, 1977) that unanointed spines caused minimal pain to humans when they punctured the skin whereas those coated with a saliva/toad skin mixture resulted in a burning sensation and inflammation. Young hedgehogs will also respond to various irritating substances but in addition lick substances from their mother's spines and self-anoint. Self-anointing was observed in individuals as young as 15 days of age before the eyes were open.

The hedgehogs were paired for five or more days and then separated again. The pair normally began to court immediately, going through a session of snuffling and squealing accompanied by nipping at the other's spines and feet. Gregory (1975) reported a courtship 'serenade' when the ♂♂ and ♀♀ were brought together and Watson (1951) described a whine when the ♂ was in search of a mate. Although we kept no detailed records, the majority of the matings were successful in producing offspring.

There appears to be no particular mating season for *A. pruneri* when kept on a non-seasonal 12 : 12 photoperiod, and litters were born in every month of the year. Gregory (1975) observed that ♀ *Atelerix* in the wild were sexually active throughout the year, although studies of *Erinaceus europaeus* from England (Deansley, 1934; Morris, 1966) show that ♀♀ are fertile only between the months of April and October.

While other genera of hedgehogs (*Erinaceus*) are thought not to be sexually mature until 9–11 months old (Allanson, 1934; Herter, 1963; Morris, 1966), the age of maturity for *A. pruneri* seems to be 61–68 days for both sexes; four ♂♂ and two ♀♀ were successfully paired with known fertile mates at this age. The weight of the smallest ♂ was 205 g and that of the smallest ♀ was 224 g, but previous

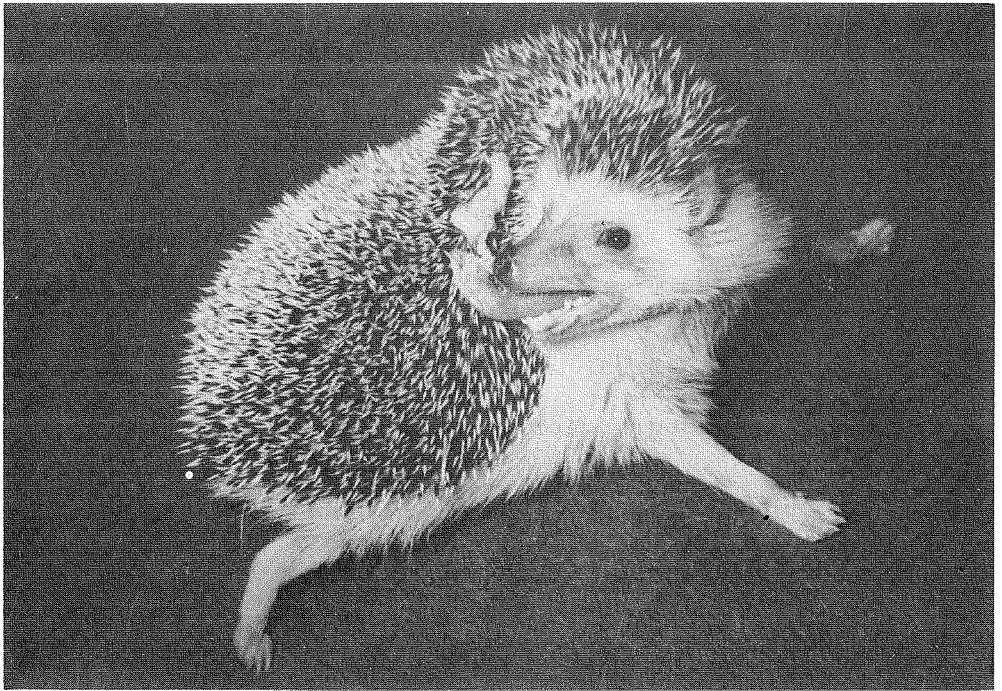


Plate 1. Captive-reared African hedgehog *Atelerix pruneri* showing self-anointing behaviour.

studies indicated that body weight is not a valid indication of sexual maturity and one sexually mature ♂ reportedly weighed only 118 g (Gregory, 1976).

The length of time between one litter's birth and another's conception apparently depends only upon the availability of a fertile ♂. Two ♀♀ were fertilised by their own offspring before being separated from them (63 and 67 days after birth) and one laboratory-born ♀ gave birth to six litters in one year but raised only one. Morris (1961) reported an *Erinaceus* that gave birth 38 days after removal of one litter at birth and immediate return of the ♀ to the breeding pen.

No captive-born ♀ was reproductively active for more than two years and only one wild-caught ♀, which was active in the laboratory for 33 months, could reproduce longer.

Previous studies of the European hedgehog timed the gestation period at 34–49, 34–46 and 35–42 days for three pregnancies (Herter, 1938) and 31–35 days (Morris, 1966). *Atelerix pruneri* seems to gestate for 35–37 days. The

DAYS	NO. OF LITTERS
34	1
35	10
36	18
37	8
38	5
39	2
40	2
41	1
42	1
43	1
44	1

Table 1. Days between introduction of ♂ and birth of African hedgehogs *Atelerix pruneri*.

length of time between the initial introduction of a ♂ and birth ranged from 34–44 days with a modal value of 36 (Table 1).

Young from 12 of 59 litters were raised successfully (at least one member reaching maturity). The litters ranged in size from one to six with a mean of three (Table 2), compared

NO. OF YOUNG	NO. OF LITTERS
1	8
2	14
3	11
4	6
5	9
6	4

Table 2. Litter size in the African hedgehog.

to *Erinaceus* (Morris, 1961) with an average litter size of five. Of the litters raised successfully, only three had 100% survival and rarely did more than three individuals survive although in one case six young were raised successfully.

Of those measured, newborn hedgehogs weighed 4.9–9.2 g but the lighter specimens rarely survived. A healthy weight is probably 7–9 g, considerably smaller than the weight of 15 g reported by Morris (1961) for *Erinaceus*. The young grow slowly at first, gaining only 1–2 g per day for the first 9–10 days but after that grow by as much as 4–5 g per day for the next few weeks and then by 7–9 g per day until maturity is reached at 61–68 days (at 204–220 g).

At birth the young are pink and spineless. Immediately after birth the skin begins to shrink, causing the still soft spines to emerge. After a few hours, the white spines are completely exposed and begin to stiffen. After two days a second set of darker, harder spines emerge. Healthy young often squeal and crawl about the nest. The eyes are closed until 18–24 days; Morris (1966) reported that *Erinaceus* opens its eyes as early as 13 days, but usually at 15–16 days.

The ♀ hedgehog is very protective of her young. When a hand is extended towards the cage, she will lunge and hiss loudly, sometimes coming out of the nest to attack with her spines and even bite the intruder. During the five years of this study the only cases of hedgehogs aggressively biting a hand or other object held near them were ♀♀ with young.

Despite their protectiveness, hedgehog mothers will eject from the nest or kill and eat young that have been handled. They will also reject or kill young if greatly disturbed; for this reason it is best to leave the mother and litter alone for a week or two after birth. There is a tendency among captive-born ♀♀ not to raise their offspring. Wild hedgehogs brought into the laboratory have a fairly high success rate (11 of 28 litters raised) but only one of 31 litters from captive-born ♀♀ was raised to maturity. In all, 19 different ♀♀ gave birth but only seven, one of which was captive born, raised young to maturity.

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