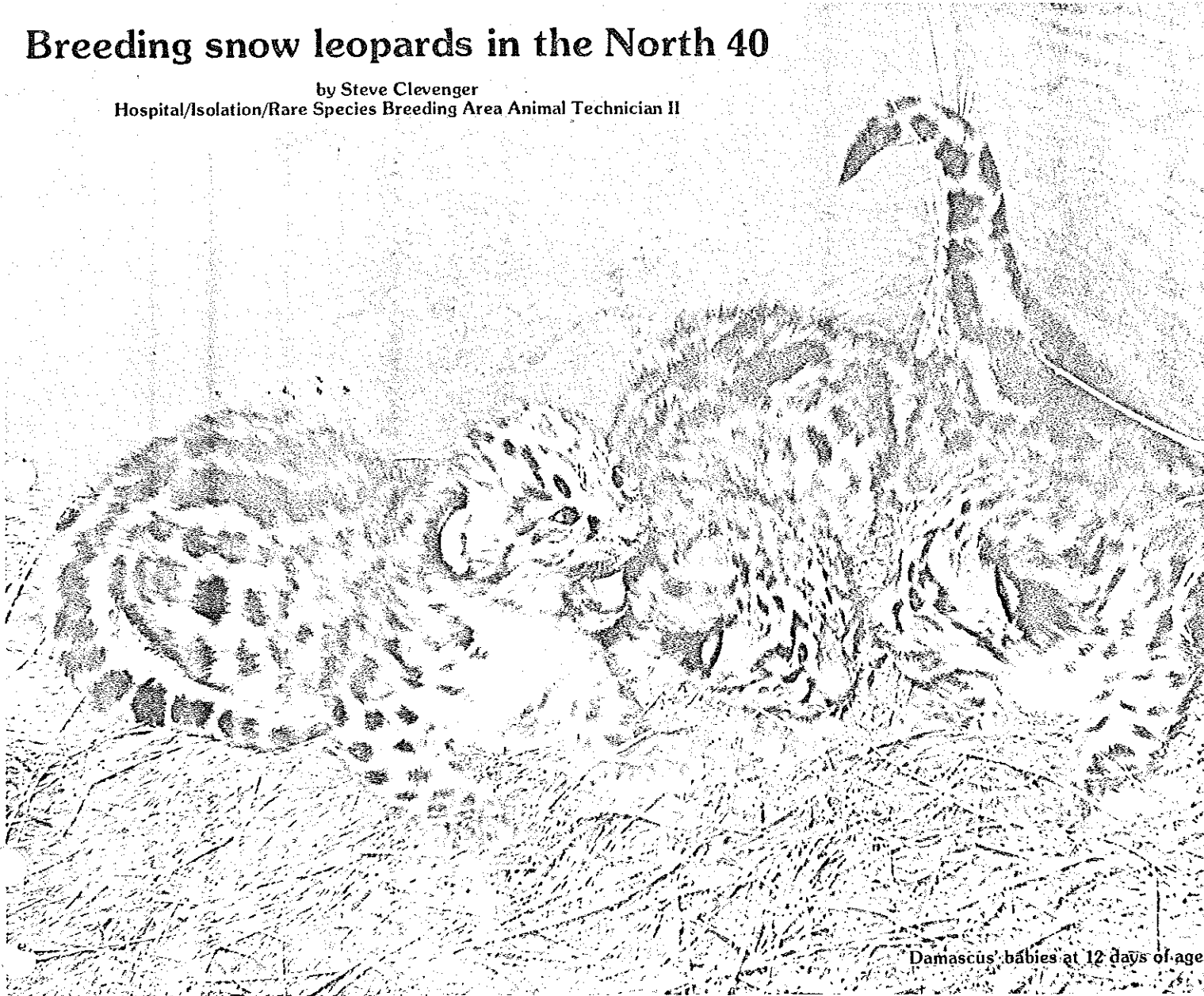
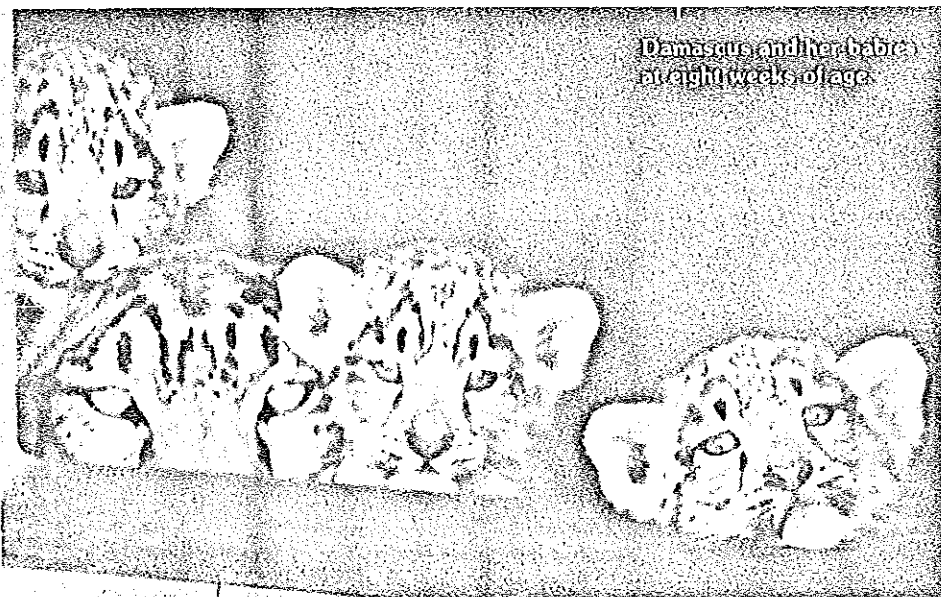


Breeding snow leopards in the North 40

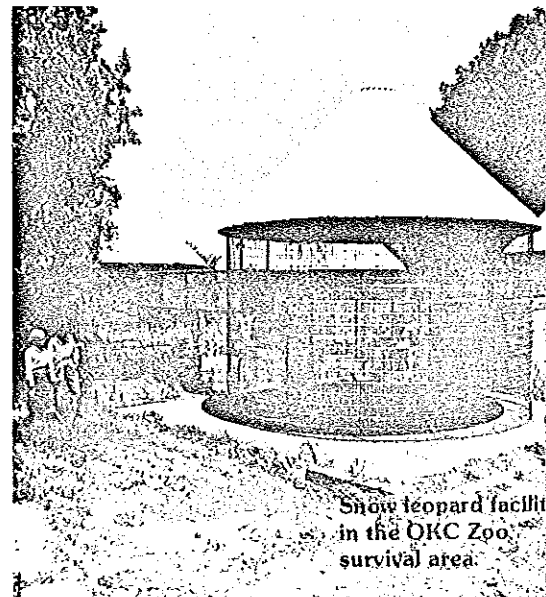
by Steve Clevenger
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Damascus babies at 12 days of age



Damascus and her babies at eight weeks of age



Snow leopard facility in the OKC Zoo survival area

THE SNOW LEOPARD (*Panthera uncia*) is a strikingly beautiful Asian cat which shares some of the characteristics of the large and small felines. Its solitary nature and the barren wastelands of the Himalayas, which comprise its habitat, combine to make this very uncommon cat extremely rare in captivity. In fact, according to recent world studbook records, only 169 of these animals are being captively maintained. Continued persecution in the wild, despite protection, and their natural scarcity further point to the need for captive propagation and careful management of the species. No species deserves the fate of extinction.

In the summer of 1975, steps began to be taken to consolidate the four separate welded wire cages east of the Isolation Building into a single facility for maintaining (and hopefully breeding) 1/3 snow leopards. This was accomplished by joining the four separate cages with three-foot-square chain-link fencing tunnels which were closed by sliding or guillotine doors. This configuration, the brain-child of Zoological Curators Linda Turner and Ralph Harris, would, when used with the dens in each of the cages, allow us to introduce a single male animal to as many as three females at one time. It would also allow for denning in the event of hoped-for pregnancies.

Our quest for reproductive success with this species began with four animals, all of which were first-generation captive-born (their parents were born in the wild). The three females are all Oklahoma City-born and all are offspring of Chumbi and Cleo. Damascus was born in May 1972, Elektra in May 1974, and Tangla in June 1975. The male of our group was received in October 1975, a donation from Arkansas animal dealer Earl Tatum. Although his studbook name is San Francisco, he was quickly dubbed Old Man, being three years older than the oldest of his intended spouses. Old Man shows symptoms of the Stargazing Syndrome — an infant nutritional deficiency which manifests itself in two ways, a backward tilting of the head with side-to-side movement and loss of motor coordination to varying degrees in stressful circumstances. This syndrome is not genetically transferrable, however, and all of Old Man's offspring are normal. The symptoms of this syndrome also disappeared almost completely when he was placed outside in the large, open-air facility. By the latter part of 1975, the facilities were completed and all animals were in place. We began introducing the male to the two older females at this time, for roughly two-week periods, and we have continued to switch the male back and forth, based mostly upon outward indications of estrus (heat) in the females. This method has been fruitful in producing four births in the last three years.

Snow leopards are seasonal breeders, generally breeding every other year during the winter months. They have, however, been known to breed as frequently as two times a year and as late as May. The length of the heat period is four to eight days. Until relatively recently, it was believed that snow leopards formed a one male/one female pair bond (which would make finding a mate easier in the wilds of the Himalayas). In other captive situations, though (as well as here in Oklahoma City), a male has mated with and produced offspring with more than one female when housed in a "harem" situation. Gestation in the snow leopard may last 93 to 105 days, with litters of one to four kittens. The kittens are weaned at eight to 12 weeks.

In the middle of January 1976, Old Man and Damascus were introduced. As with subsequent introductions, the female in each case was the more dominant animal. Copulation was observed and/or heard (snow leopards have a distinctive vocalization while mating) early in February and late in March. Early in June, Damascus did not eat for three consecutive days. Inappetence (loss of appetite) in snow leopard females often indicates the onset of estrus. Ninety-nine days later, Damascus gave birth to two male kittens.

Old Man was first introduced to Elektra in February 1977. Late in March, breeding activity was again observed and heard for approximately 30 minutes one afternoon. Because of the one isolated instance of copulation, the male and female were not separated (as is generally done when we suspect an animal is about to give birth). Ninety-six days later, Elektra gave birth to 2/1 kittens. Subsequently, none of these animals survived. Elektra had barely attained puberty (at that time she was 38 months old), the litter was fairly large and all the kittens seemed relatively small at birth.

Old Man remained with Elektra on into the winter months of 1977 and, in the middle of February 1978, copulation was again observed over a two-day period. By the middle of April, she was showing obvious weight gain and began staying in the nest box at night and not eating on May 25, 1978. Three days later we heard kitten noises from the nest box after a gestation of 101 days.

In the fall of 1978, Damascus and Old Man were again reintroduced. Copulation was observed on December 3, 1978 and heard throughout the next three days. By the middle of February 1979, Damascus was pronounced "definitely pregnant" and, on March 11, became extremely seclusive, not eating and staying in the den all the time. Two days later she gave birth to 2/1 kittens, and she is successfully rearing them at this time.

Thus far, attempts at introducing Old Man and the young (three-and-one-half-year-old) Tangla have resulted in several aggressive encounters. This is not, as it may seem, an indication of incompatibility. Tangla, when first introduced to Old Man, was in the late stages of puberty. There also seem to be strong indications that, on those occasions when we've attempted introduction, Tangla has not been in estrus. The most advantageous time for introducing the male to any of the females can be determined by looking at the occurrence of past births. (This is but another example of how well-kept animal records may contribute significantly to the husbandry and management of our animals.)

The records on the past four births tell us several things:

1. All observed copulations which resulted in births occurred during the period between December and March.
2. The average of the four gestation periods is 98.5 days.
3. The females in three of the four births became extremely seclusive for short periods immediately prior to giving birth.
4. In two of the four births the females stopped eating (or their appetites decreased significantly) just before copulation occurred.

These observations may aid us in the future in the following way:

1. Indications are that our females are seasonal breeders during the winter months. Introducing the male regularly to each female for a short period of time from November through mid-March would create conditions most favorable to breeding.
2. The average gestation period of our females will allow us to accurately predict dates of birth after an initial breeding is recorded.
3. Extreme seclusiveness will be viewed as an indicator of immediately impending birth.
4. A decrease in appetite during the receptive period (November through March) will be viewed as the onset of estrus, giving us an indication of the best possible time to introduce the male to a female coming into heat.

Captively reproducing rare, endangered and uncommon species is important to the OKC Zoo in several respects. The zoo has traditionally been a consumer of animal species. This trend must be reversed to assure survival of species threatened by man. We must produce our own animals to allow wild populations of unusual species to continue to exist in remote habitats. Zoos must become self-sustaining in this respect. They must also produce captive animals which may be used to restock dwindling wild populations of threatened species.

The snow leopard is extremely uncommon. Perhaps in 10 years it may not exist in the wild. Only through concentrated captive breeding programs, such as the excellent one we have here at the OKC Zoo, can these animals possibly be saved for posterity.