

## Breeding of snow leopards in the zoo of Zurich: veterinary aspects

### Full Text:

As early as 1929 to 1932 a pair of snow leopards "Ivan" and "Sacha" were kept in the Zoo of Zürich. Unfortunately these animals did not breed. Today the Zoo of Zürich has a successful snow leopard breeding program which began in 1974 with the animals listed below:

"**Arga**" -- female, born 1973, imported to Zürich from Russia on April 13, 1974 studbook No. Zürich 1

"**Andra**" -- female, born 1971, imported to Zürich from Russia on November 2, 1974, studbook No. Zürich 2

"**Walo**" -- male, born 1972, imported to Zürich from Helsinki on January 22, 1975, studbook No. Helsinki 8.

These animals were moved to the newly established snow leopard complex in 1976. In the same year the first female kitten "Chilas" was born. This animal had to be hand-reared by Dr. Peter Weilenmann. During the first months "Chilas" suffered from a number of abscesses caused by *Pasteurella* spp. Unfortunately, one year later "Chilas" choked on a foreign object. Necropsy revealed massive congestion of the lung, hypertrophy of the left ventricle and infection with *Salmonella typhimurium*. Of three kittens born in 1977, we lost one animal from purulent myocarditis and pneumonia caused by *Pasteurella* species.

In 1979 three kittens were produced by "Andra" and "Walo". Two of these young suffered from severe colobom defects on both upper eyelids with acute ceratitis and pannus formation and strong vascularization. The eyelids were reconstructed by canthotomy, lid splitting and subconjunctival injection of corticosteroids. Kittens born later to the same parents have never shown similar colobom defects.

Among the litters born in 1979 and 1980 severe infections of the upper respiratory tract combined with coughing, nasal discharge, apathia and anorexia were observed. Four animals from these litters died; necropsy revealed localized acute purulent necrotizing pneumonia caused by *Pasteurella multocida*. Two of the four animals also suffered from a chronic peritonitis most likely caused by *Pasteurella multocida* that was isolated from the abdominal cavity. We suspected that the *Pasteurella* infection in the breeding facility would be endemic, therefore all the adult animals were vaccinated three times during pregnancy and after giving birth, with a vaccine prepared from the isolate. At the same time breeding conditions were improved by building a heating system into the floor and UV-lamps providing high density UV-radiation. Since then, it has become standard practice to weigh the kittens daily starting at the age of three weeks. If respiratory symptoms are observed or if weight gain stops for more than two days, the animals receive antibiotics and are put in an inhalation chamber daily. At the age of 8 to 10 weeks all kittens are vaccinated against feline herpes-, calici- and parvovirus using inactivated antigens. In addition they are treated several times against parasites.

In June 1979 the male cat "Visna" was imported from Helsinki. Together with "Dobra", born in 1977 at Zürich, he sired a male kitten "Hami" in 1981. At the age of two years "Hami" suffered from subluxation and degenerative changes of both hip joints with strong valgus formation of the left tibia and fibula. Among the litters born in 1981 and 1982, we lost two kittens to *Pasteurella multocida* infections despite early intervention. In 1984 the founder cat "Andra" showed incontinentia urinae and a cystitis caused by a diverticle in the urachus area. In 1985 a squamous cell carcinoma was removed from the right eyelid of the same animal. One year later the incontinentia and hematuria recurred and were complicated by a massive ascites. The condition of the animal decreased rapidly by mid 1988 paralleled by hematuria and ascites. The animal was euthanized later in 1988; necropsy revealed a squamous cell carcinoma in the omentum, diaphragm and abdominal wall. In addition, a severe chronic and fibrinous peritonitis was found combined with marked portal fibrosis and icterus. Hematological and biochemical tests revealed no abnormal results. No antibodies to feline coronavirus or FeLV- antigen were detected in the serum of this cat. Later, a test for the detection of antibodies to FIV was performed with a negative result.

In 1990 the second founding cat "Arga" developed a massive mammatumor. It was removed and was shown to be an adenocarcinoma. Unfortunately, this tumor had already metastasized and the animal had to be euthanized at the age of 17 years and one month. Necropsy revealed metastases of the adenocarcinoma present in skin, tongue, lung, heart, pleura, peritoneum, liver and intestine. The mesenteric lymph nodes of the ileum and caecum were strongly enlarged and had a cauliflower-like

appearance. Liver metastases were up to 4 cm in size with central necrosis. Pleura and diaphragm were completely overgrown with metastases.

An important era came to an end with the loss of these first breeding cats in the Zoo of Zürich. These animals along with their offspring created much goodwill for this fascinating wild cat and its natural habitat. In the last 16 years, a total of 43 kittens were born after gestation periods of 96-100 days in the Zürich Zoo.