

NOTES ON THE BIRTH OF A SUMATRAN RHINOCEROS AT THE MALACCA ZOO, MALAYSIA

by

*Mohd Tajuddin bin Abdullah, Zainal Zahari bin Zainuddin,
Shukor bin Md. Nor, Noliah bt Bakar and Zainun bt Abd. Razak.*

ABSTRACT

A female sumatran rhinoceros which was caught on February 8, 1987 at Tenggaraoh, Johor gave birth to a female calf at the Malacca Zoo. The history of the parent, the observation and measurement made on the calf are discussed.

ABSTRAK

Seekor badak sumatra yang telah ditangkap pada 8 Februari, 1987 di Tenggaraoh, Johor telah melahirkan seekor anak betina di Zoo Melaka. Latar belakang ibu, pemerhatian dan ukuran-ukuran yang telah dibuat dibincang.

INTRODUCTION

A female Sumatran rhinoceros (*Dicerorhinus sumatrensis sumatrensis*) was born in captivity at the Malacca Zoo on May 23, 1987. The birth of this Sumatran rhinoceros in captivity is believed to be the first in this century. Three other captive births have been recorded in the nineteenth century. The first one was in December 1872, born in a den on a steamship at the Victoria Docks, England (Bartlett, 1873). The second birth was at Alipore, Calcutta, on January 30, 1889, a hybrid from a *Dicerorhinus sumatrensis lasiotis* and a *Dicerorhinus sumatrensis sumatrensis* (Reynolds, 1960). The third birth occurred in February, 1895 when a female subspecies (*Dicerorhinus sumatrensis lasiotis*, bred in the wild, gave birth to a calf in Calcutta (Reynolds, 1960).

This endangered species is included in the list of totally protected animals under the Malaysian Wildlife Protection Act 76/72. In Malaysia, its population in the wild is estimated between 70 to 100 individuals (Flynn & Abdullah, 1984 and Khan, 1987).

The new born rhinoceros provided a rare opportunity for research and monitoring of growth and development of an individual. The birth is part of an intensive captive breeding program for the endangered species in Malaysia. The purpose of this paper was to present part of the observations made on the pregnant female rhinoceros and her new born female calf.

HISTORY OF THE PARENT

On February 8, 1986, a large female Sumatran rhinoceros, weighing about

590 kg. was caught in a pitfall trap located on an old logging road at Tenggaroh, Johore. The site is about one kilometer from the South China Sea on the east and three kilometers from a new oil palm plantation to the west.

On February 10, after about 60 hours in the pit, the animal was crated and transported to the Malacca Zoo. From the first time the rhinoceros was sighted in the pit until she reached the zoo, food such as apples, pears, and leaves from *Macaranga* sp. and *Artocarpus* sp. and water were offered regularly. Feeding and bathing helped to reduce the animal's aggressive activities while in the pit and during transportation.

The animal, named Rima, was then transferred into a confinement crate measuring $4.88 \times 1.07 \times 1.68$ m for a period of 14 days. Rima was docile and responded to hand feeding.

She was then transferred into a temporary wooden paddock about 10 m wide and 15 m long, alternatively sharing the compound with another female rhinoceros called Jeram. On October 2, 1986, Rima was transferred into a new and larger enclosure at the zoo.

After about a month in captivity, her behaviour changed drastically. Rima became aggressive and sensitive to human contact. Her aggressive behaviour was manifested by loud nasal blow, rubbing the objects in the enclosure and charging at any intruder. Frequent whistling indicated that the animal was demanding food or was bored.

On February 13, 1987, an outbreak of salmonellosis at the Malacca Zoo forced a temporary relocation of Rima to Sungei Dusun Wildlife Reserve, about 300 km North of the zoo. She was confined for 10 days in a transport crate before being released into a temporary enclosure. While in the crate, endoparasite (strongyles and strongyloides) count increased drastically within seven days. She was treated with mebendazole (20 g) and tribressen boluses were administered twice daily for five days as a prophylactic against the pathogenic salmonella. She was intolerant during hand feeding and required a pail of water be poured on her dorsum to initiate defecation. When released into the temporary enclosure, she was observed to be more aggressive and intolerant to any intruders and keepers. In early April 1987, Rima was sent back to the Malacca Zoo.

Later, on May 10, 1987, swelling of the vulva was observed along with the change in coloration from light brown to purplish red. In addition, the mammary glands became engorged. The animal's reduction in food intake was observed. After 469 days in captivity, Rima gave birth to a female calf in the early hours on May 23, 1987. The birth was unassisted and unattended. On first encounter with the keeper, the calf was docile and manageable.

OBSERVATIONS AND MEASUREMENTS OF THE CALF

Although the animal's pregnancy was unsuspected, the health condition and

maintenance of the female rhino (Rima) was observed and recorded by veterinarians, researchers and keepers. Thus, the observation prior to birth was rather accidental while the researcher conducted investigations on the behaviour, endo-parasites and other aspects of management.

On May 23, 1987, at 0700 hours Rima was seen with the calf in the night stall number three. The mother and her calf were kept under a 24-hour observation by a team of two to four workers. Twenty-four hours surveillance continued until early July, 1987.

Physical examination and measurement of the newborn was conducted in the rhinoceros enclosure from May 23 until May 25. The examination was made possible by means of physical restraint of the calf (Zainal, Z.Z in prep.). The calf was physically restrained by gently stroking the perineum, under and the medial thighs for a few minutes. Minah responded by being inactive, erecting the tail horizontally and subsequently she sat on sternal and laid down laterally. Initially, the eyes widened but later closed completely when she fell into deep sleep except for frequent squirt of urination. Rima was cooperative and tolerant while the researcher handled her calf.

Body weight was measured by using Tru-Test AG350 electronic weighing scale (trade name, manufactured by Tru-Test Distributors Ltd., 241 Ti Rakau Drive, East Tamaki, New Zealand). A vernier caliper was used to measure the maximum width of the fore and hind limbs and digits one to three.

The new born Sumatran rhinoceros calf weighed 24 kg. and had soft, pliable skin covered with small wrinkled hairs. The total length was 920 mm. which included head length (120 mm.), body length (600 mm.) and tail length (200 mm.). The shoulder height, chest girth, neck girth and ear length were 450 mm., 750 mm., 170 mm., and 100 mm. respectively.

The maximum width between digit one to three of the standing fore and hind feet were 85.5 mm. and 82.9 mm. respectively. The maximum width between digit one to digit three of the sitting fore and hind feet were 81.3 mm. and 76.1 mm. respectively. The tip of the hooves were coarse and horny and curved inwards. The sole was tender and smooth.

Body hair was unevenly distributed, black and dark brown in color. The length of the hair was 10 to 28 cm. Very dense hair was recorded at the ventral abdomen, metacarpus, metatarsus and ear region. Dense hair was noted at the flank, rump-region of femur, tibia and fibula region, forehead and region behind the eyes. Moderately dense hair was noted at the dorsum region of thoracic, cervical and lumbar, below the neck and lower mandible. Sparsely distributed hair was recorded at inner thigh, pelvis, inner ear, ear base and anterior to the eyes. No hair was noted at the vulva, anus and sole.

Unlike the adult rhinoceros, the horns were not developed in the calf; however, the anterior horn bud was apparent. The diameter of the base was

23.4 mm. and the height of the tip was 10 mm. The horn bud was smooth and soft.

The skin folds which are the distinguishing feature of the Sumatran rhinoceros were present. The anterior fold was prominent but the posterior fold was barely developed.

Eye pigmentation was dark blue in the centre and blue at the margins. In contrast, the eyes of its parent were blue in the centre with brown irises. The tail tip curled to the right, a trait also present in the mother. The umbilical cord was attached and about 110 mm. in length. The vulva was oval with flabby and shrunken lips.

Two types of vocalization made by the new born calf were whining and whistling. Vocalisation was always in a slow one or two-toned manner.

The calf urinated about 0.33 litre which was colourless. The first faeces excreted on May 24 was soft, yellowish brown, and weighed 330 gm.

After birth the calf was monitored closely. Her umbilicus was swabbed with tincture of iodine. It was only on the third day that the remnant of the umbilicus dropped leaving a concentric, thickened skin. All abrasions were treated topically with acriflavin solution.

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LITERATURE CITED

- ABDULLAH, M.T (1978). Rhino trapping in Malaysia. *Rimba Indonesia XII (1)*: 27-29.
- BARTLETT, A.D (1973). On the birth of Sumatran rhinoceros. *Proc. Zool. Soc. London, 1873*: 104-106.
- FLYNN, R.N. AND ABDULALAH, M.T (1984). Distribution and status of Sumatran rhinoceros in Peninsular Malaysia. *Biol. Conservation 28*: 253-273.
- KHAN, M.K.M (1987). Distribution and population of the Sumatran rhinoceros (*Dicerorhinus sumatrensis*) in Malaysia. *Rimba Inonesia XXI (1)*: 75-82.
- REYNOLDS, R.J (1960). Asian rhinos in captivity. *Jati Zoo Yb. 2*: 17-42.
- ZAINAL, Z.Z (in prep.). Psychological restraint of the Sumatran rhinoceros.