

PSYCHOLOGICAL RESTRAINT IN CAPTIVE SUMATRAN RHINOCEROS (*Dicerorhinus sumatrensis*)

by

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ABSTRACTS

Proper captive management includes an appropriate handling and restraint technique. Psychological restraint requires little or no use of equipment unlike physical restraint. This method was successful in 12 Sumatran rhinoceros *Dicerorhinus sumatrensis* of varying ages. Stimulation of the errogenous zones near the prepubis resulted in the animal going into a dog sitting position and subsequent lateral recumbency.

ABSTRAK

Pengurusan dalam kandang yang betul mesti mengambil kira cara-cara pengendalian binatang. Pengendalian saikologi memerlukan sedikit atau tanpa perbahas seperti pengendalian fizikal. Cara ini telah berjaya diguna ke atas badak Sumatra di semua peringkat umur. Stimulasi di tempat-tempat yang sensitif berhampiran dengan organ jantina menghasilkan binatang tersebut duduk seperti anjing dan seterusnya baring di sisi badan.

INTRODUCTION

The success of any captive breeding program depends, to a large extent, on a proper management plan which includes appropriate handling and restraint techniques. This is especially important in reducing the amount of stress placed on captive animals, which can be a significant mortality factor.

Only a few reports are available on restraint techniques, and most of these are for African species and discuss the use of chemical immobilization only (Fowler 1978, Jones 1978, Wallach and Boever 1983, Fowler 1986). Such chemical immobilization may be impractical for simple manipulative procedures, and may place unnecessary risks on the animal. This is an especially important consideration for captive endangered species.

In 1987, the IUCN/SSC Asian Rhino Specialist Group recommended that a captive breeding program be instituted for the endangered Sumatran rhinoceros (*Dicerorhinus sumatrensis*) to safeguard the spesies. This paper reports on a simple method of restraint involving light physical manipulation that was developed as a part of the management plan for the captive breeding program of this species.

METHODS

Restraint techniques were developed for 8 female, 3 male and 1 calf housed at the Zoo Melaka, Peninsular Malaysia, since May, 1984. This involved constant training of the animals immediately after their capture in the field.

During training, emphasis was placed on creating a good "rhino-handler relationship". Fruits and succulent greens were offered to the rhino and the animal was hosed down frequently to reduce heat stress and discomfort.

From the second day to the fourth week, the rhino was transferred into a holding pen (3.25 by 4.65 m). Here, handling was more frequent and intensive. The animal was approached cautiously from the rear and the tail was held firmly between the base and the hip. The handler talked to the animal while carrying out these activities to make the animal aware of his presence. Its rump was then gently stroked forward and backward followed by the dorsal flank and head. The areas ventral to the anus and vulva and/or penis were then also stroked, as well as the prepubic region on the median plane. The medial thigh area was also stroked occasionally. The animal eventually went into a sitting position, whereupon strokes were increased in intensity and frequency. This was continued until the animal reclined completely in a lateral recumbancy. If strokes were continued on the medial thigh, the animal extended its hind limbs.

RESULTS AND DISCUSSION

Psychological restraint is one of the many methods of types of restraints that can be used in captive wild animals. It has many advantages over other methods in that it requires little or no use of equipment such as confinement crates. In addition, unlike chemical immobilization, it is not stressful or dangerous to the animal. This was an especially important consideration in the development of restraint techniques for the endangered Sumatran rhino.

The psychological restraint described in this paper that was developed for captive Sumatran rhino used only light manual restraint and vocal commands. It has been successfully used for all 12 animals in the breeding program at the Zoo Melaka. Response was often very fast: the calf responded at 2 weeks of age, 1 adult female responded on the day that she was transferred into a holding pen, and in Indonesia, 1 adult male was restrained by this method on the first day that he was handled (Mohd Tajuddin and Zainal-Zahari 1987).

Several factors were important in developing this technique and were based on an understanding of the behaviour and physiology of the animal. First, a "rhino-handler relationship" had to be established. This was accomplished by daily grooming and feeding contact by the handler that allowed the animal to develop a familiarity with the individual handler. Second, it was important that the handler establish a dominance over the animal. This is because the rhino could charge very quickly and can be dangerous (Hubback 1939, Evans 1905), and has a narrow turning point. Third, stimulation of the errogenous zones near the prepubis elicited a sitting and lying down response. This may be a result of a reflex contraction of the surrounding muscles (which include the gracilis, pectineus, rectus abdominis, sartorius and vastus-medialis muscles) (Said pers, comm.) and involvement of the inguinal nerves and posterior mesenteric plexus of the sympathetic system (Sissons 1967, Breazile 1971).

Although this method of restraint may be impractical for many species, we have used it successfully in the Sumatran rhino as well as the Malayan tapir. The use of this type of psychological restraint should be explored in other species because it holds many advantages over other methods of restraint.

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