

Behaviour of Bachelor Males of the Przewalski Horse (*Equus ferus przewalskii*) at the Reserve Askania Nova

Verhalten einer Hengstgruppe von Przewalskipferden (*Equus ferus przewalskii*) im Reservat Askania Nowa

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Abstract

The aim of this study was to investigate social relationships between Przewalski horses at a high density in a bachelor group housed in a 3.5-ha enclosure. The group consisted of 16 males aged 5 to 16. Behavioural data were collected during 18 days, total 216 h. Fifteen minute focal animal sampling was used; each horse was observed three times a day for a total of 45 min. The occurrence of 25 behaviours was recorded, and group spacing behaviour was studied using nearest neighbour recordings. The group divided into four subgroups; this supports earlier findings of bachelor groups ($n \geq 10$) dividing into two or more subgroups if they included several males aged > 5 years. The total frequency of social interactions was $14.6 \pm 1.1 \text{ h}^{-1}$. Although the density of the group in this study was higher than in other zoos, the males interacted agonistically only 3.6 h^{-1} . The most frequently observed social behaviour categories were friendly interactions. This study shows possibilities to use some investigative behaviours (marking, flehmen, olfactory investigation, etc.) as indicators of social status of animals in a group.

Keywords: Equid; Przewalski horse (*Equus ferus przewalskii*); Bachelor group; Social behaviour

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Introduction

The Przewalski horse (*Equus ferus przewalskii*) became extinct in the wild in the mid-1960s. However, the species has been successfully maintained in captivity for more than 100 years. Despite the fact the horses had never been studied in their natural habitat, it is known that Przewalski horses use the harem system of social organization (Keiper, 1986). The horses live in small, permanent harem groups composed of females, their offspring, and a harem stallion. Adult males that do not belong to harem bands either live in bachelor groups or temporarily live alone.

At the present time, a multitude of studies concerning behaviour in harem groups of Przewalski horses in zoos have been published (Boyd, 1988; Hogan et al., 1988; Keiper, 1988; Kolter & Zimmermann, 1988; Mackler & Dolan, 1980). There is much less information about bachelor groups (Tilson et al., 1988; Wakefield, 1996). Kolter & Zimmermann (2001) gave a detailed analysis of management of bachelor groups of Przewalski horses and their behaviour in zoos and semi-reserves except the Reserve “Askania Nova”. Since regional programmes for the Przewalski horse (EEP, SSP, SMP) were established in the mid 1980s, almost all zoos discarded the practice of keeping adult Przewalski stallions in isolation. In this connection a question about their behaviour in mix-aged groups is rather topical as often increasing aggression becomes a problem for wild Equids in captivity. Some comparative behavioural studies have revealed that of Przewalski horses and domestic horses, the former are more aggressive (Feh, 1988; Christensen et al., 2002). Kolter & Zimmermann (2001) reported that about 10% of the Przewalski bachelor population in captivity died between 1986 and 2000 as a result of injuries caused by fights. In Askania Nova, about 8% of bachelors died by the same reason between 1992 and 2003.

As no zoo but Askania Nova Reserve has an experience of keeping large groups of bachelors ($n > 10$) in rather small enclosures, the aim of the present investigation is studying relationships between Przewalski horse males at a high density in a bachelor group.

Materials and Methods

Animals

Przewalski horses have been kept at Askania Nova Reserve since 1899. For more than 25 years, one or several bachelor groups have been kept at the Reserve; each group consists of 2 to 43 males of different ages. Colts under the age of 2 years live in their natal groups on pasture. At the age of 2 they are removed to a group of young bachelors in a 90-ha separate steppe enclosure where they remain until 4–5 years of age. Males above the age of 5 are removed to another mixed-age bachelor group, up to 43 specimens in number, housed in a 3.5-ha enclosure without edible vegetation. The enclosure is fenced about with wire net 2 m in height. There are a shed and a water trough in the enclosure (Fig. 1).

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