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FILM E 2473

Heterohyrax brucei (Procaviidae)
Young Playing with Each Other and with Young
Procavia johnstoni (Open Air Shots)



INSTITUT FÜR DEN WISSENSCHAFTLICHEN FILM · GÖTTINGEN

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Address of the Author of Publication:

Dr. H.N. HOECK, Estacion Biologica Charles Darwin, Santa Cruz-Galapagos, Casilla 58. 39, Guayaquil-Ecuador.

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Tel. (05 51) 2 10 34

HENDRIK N. HOECK, Seewiesen:

Film E 2473

Heterohyrax brucei (Procaviidae) – Young Playing with Each Other and with Young Procavia johnstoni (Open Air Shots)

Author of the Publication: HENDRIK N. HOECK

With 3 Figures

Summary of the Film:

Heterohyrax brucei (Procaviidae) – Young Playing with Each Other and with Young Procavia johnstoni (Open Air Shots). Three out of the four elements of hyrax play behaviour are shown. These are

1. fur nipping, mainly used to induce others to play;
2. climbing and pushing, indulged in by several youngsters climbing on bushes;
3. mounting, shown here between a young ♂ *H. brucei* and a young ♂ *P. johnstoni*.

Inhalt des Films:

Heterohyrax brucei (Procaviidae) – Spiel der Jungen miteinander und mit Jungen von Procavia johnstoni (Freilandaufnahmen). Hier werden drei der vier Elemente des Spielverhaltens der Klippschliefer gezeigt. Es sind dies:

1. ins Fell kneifen, vorwiegend, um andere zum Spielen anzuregen;
2. Klettern und Schieben; mehreren Jungen macht es Vergnügen, auf Büsche zu klettern;
3. Besteigen, hier von einem jungen ♂ *H. brucei* und einem jungen ♂ *P. johnstoni* vorgeführt.

Résumé du Film:

Heterohyrax brucei (Procaviidae) – Petits jouant entre eux et avec un jeune Procavia johnstoni (prises de vues en plein air). Trois des quatre éléments du comportement de jeu de l'hyrax sont montrés. Il s'agit

1. du tiraillement de la fourrure, employé essentiellement pour inviter les autres à jouer;
2. de l'escalade et de la bousculade; exécutées par plusieurs jeunes grim pant dans des buissons,
3. du chevauchement, montré ici entre un jeune mâle d'*H. brucei* et un jeune mâle de *P. johnstoni*.

General Preliminary Remarks

Hyrax (Order Hyracoidea) belong, together with the elephants (Order Proboscidea) and the seacows (Order Sirenia) to the Super-Order of the Paenungulata or „nearly ungulates“ (GRZIMEK [3], SIMPSON [12]).

Today three genera of hyrax, all strictly herbivorous, are extant in Africa and Asia Minor; the nocturnal Tree hyrax *Dendrohyrax*, inhabiting trees, and the diurnal Bush hyrax *Heterohyrax* and Rock hyrax *Procavia*, both living mainly among rocks (BOTHMA [1], HAHN [4]).

In the Serengeti National Park the Bush hyrax *Heterohyrax brucei* (Procaviidae) is found on some of the granit outcrops called kopjes, living sympatrically with the Rock hyrax *Procavia johnstoni* (HOECK [5]). They have similar social organizations, but differ in their feeding and mating behaviour, and in the territorial calls of ♂♂

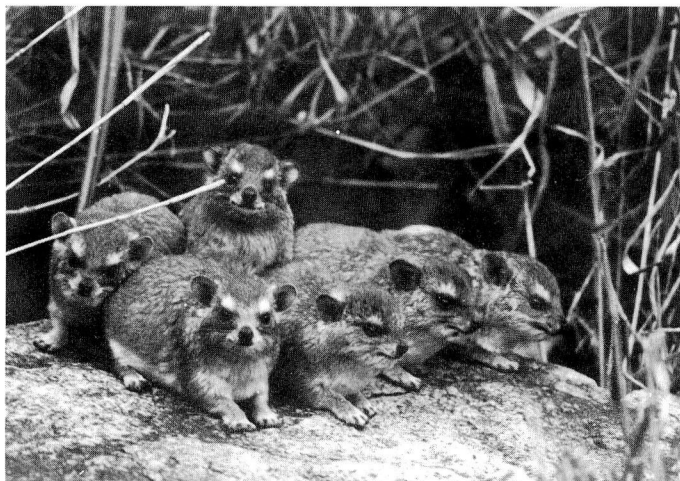


Fig. 1. All the young of a family group form a nursery group as soon as they are born, as in the case of these 6 young *H. brucei*

(HOECK [7]). They live in family groups (harems) consisting of a sexually mature territorial ♂, several sexually mature and genetically related ♀♀ and their young of both sexes. ♀♀ of a group come into oestrus synchronously and give birth once a year after a gestation period of 7.5 months (HOECK [7]), MENDELSSOHN [8], MILLAR [9], ROCHE [10], SALE [11]).

H. brucei have up to three, *P. johnstoni* up to four young in a litter. The young are precocial, being fully developed at birth, and they are weaned after six months. While suckling the young establish a “teat order” (HOECK [6]).

As the young of a family group are born they associate, forming a nursery group (Fig. 1). In kopjes where the two species live sympatrically and where the birth seasons coincide, the young of both species usually associate in one nursery group.

Play behaviour in Bush and Rock hyrax has four characteristic elements that may occur alone, but usually occur in irregular sequence or may be interwoven. These can be characterized as:

1. Jumping: From standing or walking, an animal suddenly jumps once or oftener, twisting his body and bouncing on his four legs; or he may first run, then jump in this way.

2. Fur nipping: Usually one animal invites or entices another to play, by seizing a piece of the other's fur with his incisors then twisting his head, or even sometimes rolling right over without letting go. Usually this nipping is aimed at the rump region, and the bitten playmate may spring away, or turn round and respond aggressively, or accept the invitation in that he too nips (Fig.2).

3. Climbing and pushing: This is more common in *H.brucei* than in *P.johnstoni*. While climbing on branches, one youngster may start pushing and/or nipping another or others. Any youngster which loses its balance and falls in this game



Fig.2. While bathing, young members of a family group often playfully nip at each other's fur. Four *P.johnstoni* are shown, the animal with open mouth has just been nipped, he tries to retaliate by nipping the fur on his playmate's cheek

climbs back immediately, and pushing and nipping continue. A youngster may lose balance, but save itself from falling by clinging to the branch with its forepaws, whereupon it swings its body until the hind paws regain hold of the branch, the body is pulled up and play continues. A falling animal may also cling to a branch with its incisors, and struggle until the feet find a hold. Play may be interrupted by brief feeding spells.

4. Mounting: An animal mounts a playmate, grips its sides with its forelegs and makes a few thrusting movements, very similar to adult mating behaviour (HOECK [15], [17]). The playmate may first stand still, then spring away, or respond by biting and nipping, twisting his head and perhaps rolling over. Often the players change roles, mounting each other alternately (Fig.3). This play element very often ends in agonistic behaviour.

Play behaviour can be observed in young animals most usually before and after feeding in the early mornings and late afternoons, when group members come

together. The young start playing soon after birth, the most common games being fur nipping and jumping.

The young of the previous year, especially ♀♀, show great interest in the neonates and incite them to play by nipping them. A mother may do this too, or any other adult group member.

From the age of one week, climbing and pushing is a common game among members of a nursery group, and young of the previous year may take part. Particular bushes and young trees in the home range are favoured for this game. At about four months



Fig. 3. Two young ♂♂ play at mounting. A year-old *H. brucei*, with penis partly erected, mounts a *P. johnstoni* (4 months old)

of age mounting is indulged in more often, especially by young ♂♂ before puberty, when agonistic behaviour often follows. If a ♀ is involved, the ♂ mounts much more often, usually with erected penis (Fig. 3).

Play is seldom observed in sexually mature animals, although sometimes an animal may jump up suddenly and dash off. While basking, and especially when bathing (HOECK [13]), an animal may start nipping and incite play (Fig. 2).

An adult may also be induced to join a group of young at play.

On two occasions fights were observed to develop after nipping and mounting games, whereupon a territorial ♂ intervened and separated the youngsters.

The *H. brucei* and *P. johnstoni* young play together generally with no apparent hindrance, as play elements are very similar in the two species. The later pronounced difference in mating behaviour is, however, already apparent in the play; when playing together at mounting, *H. brucei* tends to mount longer, whereupon *P. johnstoni* becomes impatient and may respond aggressively (HOECK [15], [17]).

In hyrax, as in many other mammals, play is very important, allowing the acquirement and practice of movements and reactions essential for survival. While climbing

and pushing in play the young practise climbing, balancing and the avoidance of falling, all key patterns in feeding (HOECK [16]). Mounting play appears later in mating and agonistic behaviour, and mounting may also be important in the establishment of ranking order. Another important function of play may be to ensure that litter-mates stay together in the nursery group (EWER [2]).

Complementary to this film see films E 2176, E 2177, E 2178 on Grooming, Feeding and Mating Behaviour of the Rock hyrax; and E 2268, E 2474 on Feeding and Mating Behaviour of the Bush hyrax (see HOECK [13]–[17]).

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Description of Film

1. A mother incites two youngsters (a few days old) to play, by nipping at their fur. The youngsters bound away.
 2. Several youngsters (about 4 months old) climb and push in a bush; on the right an adult ♂ *P.johnstoni* lies, ignoring them.
 3. and 4. Youngsters playing at the kopje edge. One incites others to play by nipping at the fur of cheeks and neck. A playmate avoids the onslaught brusquely. On the left are two adult ♀♀, one of them is nose-greeted by a youngster. A *P.johnstoni* youngster feeds from a bush near to three others, he briefly incites a young *H.brucei* to play. A ♀ of the previous year plays with one youngster, jumping on a branch and nipping.
 5. Fur nipping in a group of four youngsters.
 6. and 7. A mounting game played by two youngsters, about 6 months old. Movements are similar to those in mating behaviour. In the foreground are two adult *P.johnstoni* and two adult *H.brucei*.
- Fade out – fade in: *H.brucei* and *P.johnstoni* playing together.
8. to 10. A young ♂ *P.johnstoni*, about 4 months old, provokes a male *H.brucei*, about a year old, to play. Fur nipping and mounting follow. They disturb an adult *H.brucei* ♀, who threatens and chases them. The play becomes intense, both animals scratch themselves (displacement scratching). The *H.brucei* ♂ mounts, the *P.johnstoni* ♂ jumps aside with ears laid back – a sign of fear. The play becomes boisterous, they mount each other alternately, *H.brucei* makes thrusting movements with erected penis.

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Sources of the Figures

Abb. 1–4: H. N. HOECK.