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Cover Page Footnote
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AN UNUSUAL METHOD OF FEEDING BEHAVIOR IN CAPTIVE AFRICAN ELEPHANTS

by Zvy Sever

ABSTRACT: An unusual feeding behavior was observed in a small herd of African elephants at the Safari Park, Ramat Gan, Israel. An elephant was observed to insert her trunk into the rectum of other elephants in order to obtain undigested food. This behavior was studied in relation to the hierarchy of the elephants within the herd. Half a year of observation led us to conclude that the elephant higher in hierarchical level would insert her trunk into the rectum of elephants lower in the hierarchy. The reverse was not observed.

INTRODUCTION

The elephant herd at the Safari Park includes 11 African elephants (Loxodonta africana) living in a wide yard, surrounding a few sleeping quarters and a small water pool. The herd is composed of three females, about 24 years old, having one calf each, and five females about 14 years old. The male of the herd died in May 1978.

During the research I had the opportunity to observe a peculiar behavior which, as far as I know, has not been reported in the literature. That behavior is manifested by the insertion of an elephant's trunk into the rectum of another elephant to a depth of about one foot (approximately 30 cm). Several seconds afterwards the insertor would pull its trunk out, holding a big piece of excrement, which the elephant examined for its contents. Should there be an undigested food, such as, fruits and vegetables, the elephant would eat it (Fig. 1).

This behavior was reported for the first time by Rafi Giron in December 1980, and was followed by my project on the subject in order to ascertain how this behavior is related to the hierarchy of the herd.

Fig. 1. Etty inserts her trunk into the rectum of Mazal.

RESULTS AND DISCUSSION

It is known that food digestibility in elephants is relatively low, about 44% (Benedict, 1936). It is therefore possible to find in their dung or scats some undigested parts of food, such as, pieces and peels of fruits and vegetables and some kinds of seeds (Bere, 1966).

As was observed in this herd, all the elephants examine their own feces and feces of other elephants with the aid of the "fingers" at the tip of their trunks and select from it parts of fruits and vegetables which they consume. This behavior is so common that immediately after defecation by an elephant an examination of the excrement takes place.

When the excreting elephant is the highest in the hierarchy, it turns around and examines the excrement with its trunk (Fig. 2). The lower elephants approach just afterwards to make their own examination on whatever is leftover from the dung. When there is a higher elephant than the defecating elephant nearby, the higher in the hierarchy is the one who approaches right after the excretion to examine the scat and the excreting elephant moves away.

Fig. 2. Examination of fecal material for undigested food.

Those observations enabled us to establish the importance of the excrement in the elephants' daily behavioral pattern. This may also explain the origin of the development of the habit of inserting the trunk into the rectum.

The first observation of such peculiar behavior among the Safari Park elephants was reported by the Safari worker, Rafi Giron, who described a female named Etty approaching another elephant, inserting her trunk into its rectum, removing a piece of excrement, and finding in it a complete orange, which she ate. When the hierarchy of the herd had been learned, this phenomenon was checked specifically.

It seems that the complete behavior of inserting the trunk into the rectum is done only by Etty to elephants lower in the hierarchy than herself (Fig. 1). Etty is an active young female, 14 years old, the leader of her age group until a year ago, when that group was added to the older herd of elephants. As a result, Etty's status in the hierarchy was changed. She became third in the hierarchy and shares this place with one of the oldest females.

According to the workers at the Park, Etty used to push her trunk into other elephants' rectums before they were joined with the older herd. It is possible that by "inventing" the trunk insertion behavior, Etty had gained more nutrients from the feces than by waiting for the elephants to defecate; this may be because she was able to get to the feces before other elephants.

After uniting the two elephant age groups, this behavior was not observed among the older elephants, but some of the young females used to approach the rectums of other elephants with their trunks immediately after detecting signs of predefecation (standing in one place, spreading the hind legs, and urinating). In addition, baby elephants about two years old were seen inserting their trunks into the older elephants' ani.

A comparison may be drawn between the above described behavior and that discovered on Koshima Island, southern Japan. On this island the researchers observed that one day, a young female monkey took a potato that was lying on the beach, ran with it to the water, washed it and then ate it. After seeing this, the other monkeys started to imitate this behavior. Immitation of the washing behavior was rare by some adults or infrequently observed in others (Wilson, 1975). In both cases it is possible to examine how a young member of a group "invents" a new way to handle food. The young individuals learn the invention while the older ones are more conservative in their behaviors, and, therefore, their adoption of the new behavior is partial or non-existent.

It is possible to assume that, in time, the new behavior will become an integral part of the behavioral repertoire of this herd. It will be interesting to research the development of the trunk-inserting behavior in these elephants, and to find out whether it exists in other herds captive or wild. We may be witnessing the beginning of a new behavior.

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Editor's Note: Bucky Steele, Lee Keener, and Toby E. Styles have informed us that they have also observed trunk insertion behavior in captive elephants, in the USA.

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