THE ZOO HIGH SCHOOL GRADUATION PROGRAM - AKIVA'S STORY

My name is Akiva (18) and I am a high school graduate living in Jerusalem, Israel. I studied at Hartman High School, part of the Hartman Institute that promotes cooperation between all religions in the spirit of democracy, equality and pluralism. Animals are my passion and it is my dream to work with animals and help protect their natural habitats so that we may live side by side with these extraordinary beings.

During the past year-and-a-half I participated in a program that gives high school seniors an opportunity to conduct serious academic level research in the field of zoology. The students in the program are guided by leading scientists in the field in order to produce high quality research papers. The program is based at the Jerusalem Biblical Zoo, which welcomed us with open arms and became a second home guiding us throughout our research. The program exposed me to the fragility and complexity of the natural world emphasizing the importance of protecting the animal kingdom. I feel that I have a better understanding of the animal world and the threats it is up against every day. I've grown to appreciate the uniqueness of every species as strange as it may seem. I have no doubt that this program and the Jerusalem Biblical Zoo both had a big part to play in developing my understanding of the natural world. I believe that the graduates of this program, me included, will become ambassadors to the world working to protect the animal kingdom. This was a great opportunity for us and I am proud to have been part of such a unique and important program. Following my experience in this program I plan to volunteer this summer at a wildlife ranch in South Africa that works to protect and breed endangered species so that one day they may be released back into the wild. This program had a big part in influencing me to volunteer at this ranch and to pursue a career in the protection of the animal world.

For my research paper I studied the establishment of the hierarchy in a new group of meerkats at the Biblical Zoo in Jerusalem. Meerkats, animals in the mongoose family, live in the Kalahari Desert in southern Africa. They live in groups of up to 40 individuals, ruled by a dominant male and female who are the only meerkats in the group that breed. The group behaves in a very social and cooperative fashion with every individual contributing to group duties such as babysitting, feeding the offspring of the dominant pair and guarding. I researched a new Meerkat group that was created by combining two existing groups (four original Meerkats in Jerusalem and five new ones). In this research paper I studied the establishment of the hierarchy in this new group. One of the behavioral patterns that expresses the hierarchy of a group is the guarding patterns of the group, and therefore I focused on the following research questions:

- How do the guarding patterns change in reaction to the creation of the new group?

- How is the guarding role divided between males and females?

- What is the frequency of fights for dominance in the new group, and what is their nature (level of violence, length of fight, number and identity of participants)?

In addition to these questions I also studied the effect of external factors (e.g., weather and volume of visitors) on the group's behavior. My final and concluding question was what is the difference between the establishment of the hierarchy in a captive group as opposed to a wild group? To answer this question I used both my research and research that has been conducted and published regarding groups in the wild.

I studied the group through weekly observations of their behavior and guarding patterns. In addition to the observations of the group I observed the changes in the crowds and the weather. The observations were analyzed with graphs and statistical tests.

I found that the guarding patterns did indeed change in a number of ways in reaction to the creation of the new group, but the most radical changes were the locations of the guarding, which moved to lower locations, and the number of dominant guards during each observation, which were usually more than one individual. As a result of these changes I concluded that the group did not establish a stable hierarchy. The fact that there were no serious and violent fights in the group supports this conclusion.

For my second research question I found that females guarded more time than males, contrary to what has been found in wild groups, where males generally guard more than females. It is possible that the group I researched is an unusual group, but further research is necessary in order to determine the answer to this question.

When my results, regarding the hierarchy, are compared to the results of research done on wild groups, we find several major differences. The main difference is the time it takes to establish a hierarchy and the violent fights that accompany that process. In nature the establishment of the hierarchy is very quick and is usually accompanied by extremely violent (and sometimes fatal) fights. I found that three months after the creation of the group they still did not establish a stable hierarchy, and I did not witness any violence of the sort that should be accompanying the competition for dominance.

Regarding external factors, I found, as I had postulated, that temperature change does have an effect on the group's guarding patterns, but other factors, such as rain, are more significant in affecting behavior. Regarding the crowds I found that the changes in the crowd do not really have any effect on the guarding patterns of the group.

This research paper has opened questions and problems that point to directions for further research on meerkats in captivity. This research is important because it shows that captive conditions do indeed affect meerkats' behavioral patterns. Research such as this can contribute to efforts to reduce the effect of captivity on changing the natural behavior of wild animals.

I hope you've enjoyed reading a little bit about my research!