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Asiatic Wild Ass in Israel

D. A. Blank

Abstract

The Syrian wild ass (*Equus hemionus hemippus*) lived in Israel in historic times until the 1930s, when it disappeared from the entire Middle East region. Khulans from other subspecies (*E. h. onager* - 6 individuals and *E. h. kulan* - 5 individuals) were brought to Israel from European zoos during 1968-69 (the authors of project considered that *onager* and *kulan* were the same subspecies) and these animals bred together in the semi-captivity conditions of the Haibar Yotvata Reserve. Later, during a 12-year period from 1982 through 1993, six groups totalling 38 khulans (17 males and 21 females) were realized in the Negev Desert. These groups had quite low success rates in establishing viable, breeding population following release because of several mistakes made during the project. First, all were realized during spring, which due to the local conditions of vegetation, watering places and weather in the Negev Desert, was the wrong season; late autumn and winter would have been much more suitable for this purpose. Second, many groups had too many males creating the wrong male to female ratio. Third, individuals for realizing were too adult. Fourth, groups were held in pre-release enclosures less than 5-6 months, which didn't allow for acclimation and creating new social structure. And fifth, individuals were only evaluated based on genetics, while social behavioural traits were not taken into consideration. The result of these mistakes was difficulty in establishing a cohesive, stable population and an initially slow population growth. Over time, however, they became more successful, at the beginning of project, though over time it became more successful and currently there are about 100 khulans in the wild population. Asiatic wild asses are still kept in the semi-captivity conditions of the Haibar Yotvata Reserve, where they live with other ungulate species. A number of interspecific aggressive interactions between khulans and other species have been observed.

Key words: Asiatic wild ass, interspecific aggression, Israel, history, reintroduction, taxonomy.

Introduction

The number of papers devoted to the Asian wild ass in Israel is very limited. Results of the realizing project of wild ass and their conservation situation are unknown for most scientists, therefore we decided to publish this information and sum results of the realizing project.

Materials and methods

The main material for this paper was taken from local reports within the Nature Reserves Authority. In addition, we made visual observations of the wild asses' behaviour inside the Haibar Reserve using binocular (x 8 magnifications). About 50 hours of observations were made.

Results and Discussion

History and taxonomy

The Syrian wild ass (*Equus hemionus hemippus* I. GEOFFREY, 1855), smallest subspecies (height 1 m at the shoulder) of Asiatic wild ass, lived in Israel in historic times. It is now extinct throughout its once vast Middle Eastern habitat that extended from Syria through Iraq to the Zagros Range in Iran (GROVES & MAZAK 1967). One of the last known individuals of this subspecies was killed in the Euphrates region in the mid-1800s (MUSIL 1927), and another was collected in 1909 in the Syrian Desert and died at the Vienna Zoo in 1927 (QUMSIYEH 1996). It appears the Asiatic wild ass disappeared earlier from the Israel region than the Syrian Desert,

with additional accounts of the later existence of the Syrian wild ass in Israel based mostly on information given by the Bedouin, which may lack reliability (AHARONI 1932). Still, GROVES (1986) asserts that the last sighting of individuals of this subspecies was in Syria in 1938.

The Asiatic wild ass once again appeared in Israel in July of 1968, when six individuals of *E. h. onager* (3 males and 3 females) were transferred by air from the Rotterdam zoo in Holland to the Haibar Yotvata Reserve, 35 km north of the city of Eilat. A second herd consisting of five individuals of *E. h. kulan* (2 males and 3 females) arrived in Israel by ship from German zoos in May 1969 (URI TSON 1990). These animals were kept in a 2-km² enclosure at the Haibar Yotvata Reserve, where they were allowed to interbreed (SALTZ 1995).



Fig. 1: Group of kulans (*E. h. onager* x *E. h. kulan*) in the Haibar Yotvata Nature Reserve (southern Israel), February 1999 (photo: N. PAKLINA).

Whether the Iranian population of the Asian wild ass (*E. h. onager*) and the Turkmenian population (*E. h. kulan*) are the same subspecies or not, isn't clear in my opinion. GROVES & MAZAK (1967) described these two populations as separate subspecies, defining the most distinguishing feature as the skull: Turkmenian khulans have a more elongated occipital region and somewhat lower orbits than the Iranian wild ass. His observations, however, were based on the measurements of only 1-4 individuals. GROVES, himself, indicated that separating of these subspecies is much more complicated than he at first thought, and that he could only see the differences between them if they stood side by side in their winter coats (Dr. A.C.V. van BAMMEL, in let.). In contrast, Dr. A.C.V. van BAMMEL and M.A. van GREVENBROEK (Museum of Natural History, Leiden, Netherlands, in let.), who studied Asian wild asses in several zoos in Europe, weren't able to find differences between living animals taken from Iran and those taken from Turkmenistan, just over the Iranian border. They further affirmed that GROVES & MAZAK (1967) took what he'd considered typical measurements of Turkmenistan khulans from a single herd, and the Iranian onager measurements from several herds. So it seems reasonable, that in contrast to the Iranian onager, the khulan showed "family characters". Besides, Iranian onager populations and Turkmenian khulans are not separated geographically, except by the man-made geopolitical border between Iran and Turkmenistan, and differences in the skull measurements may be attributable to a cline run-

ning from south to north. Moreover, SOLOMATIN (1973) indicated that even though contact between these two groups is apparently absent at present, it was at one time possible, and wild asses from Iran and khulans from Turkmenistan represent the same subspecies. To further support this position, the wild asses of Afghanistan and Turkmenistan are two parts of a single population, where khulans migrated seasonally from the north part of their natural habitat to the south and back. Genetic research demonstrates that populations of both subspecies have chromosomal numerical polymorphism, $2n = 54, 55$ for *E. h. kulan* and $2n = 55, 56$ for *E. h. onager* (RYDER & CHEMNICK 1990). However, this difference in the number of chromosomes for some individuals in the population does not necessarily support that these are two distinct subspecies; rather it indicates that isolation and independent evolution of the Iranian and Turkmenian populations, which are the most closely related among described subspecies, apparently has begun already.

Reintroduction project

The Asiatic wild asses bred very well in the Haibar Reserve, and in 1981 the Israel Nature Reserves Authority decided to begin releasing them into the Negev Desert. Between 1982 and 1987, twenty-eight individuals in 4 groups were reintroduced. In April 1982, the first group of 5 males was transferred to an enclosure in the Maktesh Ramon Reserve in the Negev Desert. Regrettably a few days after they arrived, they broke down the fence and escaped from the enclosure. By May 15th, there was evidence of just four of the five males in the region surrounding the enclosure; and after a few weeks, two were found shot to death near the Jordanian border, 35 km from where they escaped. The other three had disappeared completely, to be seen a couple of years later 100 km from the enclosure. On March 9th, 1983, the second group of 8 individuals (2 males and 6 females) was taken to the enclosure. Sadly the oldest female of the group died after three months. However after a total of five months in pre-release captivity, the remaining 7 animals were realized in the Negev, and this group later became the nucleus of the introduced herd. On 4th March 1984, the third group of 7 individuals (2 males and 5 females) was moved to the enclosure and realized 4 months later. On 9th March 1987, the fourth group of 8 individuals (5 males and 3 females) was transferred and realized 2 months later (COHEN & UALENZUELA 1994).

In February 1992, a fifth group of 8 individuals (3 males and 5 females) was taken to a different enclosure in the Negev Desert located at the Faran wadi. Of this group, only one adult female and her son remained in the Faran wadi area after release, although sometime later, an adult male from one of the other groups joined them. On 17th February 1993, two additional females were transferred to the Faran wadi enclosure and realized on 5th March 1993. These females also joined the small Faran wadi group (SINAI, in let.).

At this point, we can evaluate some of the results of this Negev reintroduction project. During the 12-year period from 1982 to 1993, a total of 38 Asian wild asses was realized in the Negev Desert (17 males and 21 females). Of these, only 25 individuals (10 males and 15 females), or 66 %, participated in breeding in the free population. The fate of the others was mostly unknown. I believe this is quite a low success rate, and the cause of this phenomenon can be attributed to a number of mistakes made during the reintroduction project:

1. Time of year for release must be considered. Spring, when all groups were realized, was not the optimal season for reintroduction. Since spring is the time of year when the rains end and hot weather begins, the grasses dry out making it much harder for the once captive ungulates to find forage and ultimately adapt to the wild. In contrast, late autumn and winter would have been much more favourable months to realize the wild asses, because the rains and cooler weather provide for green vegetation throughout the Negev Desert.
2. Finding the right balance between males and females within the released groups is an important factor. The best situation is for a reintroduction project to try to maintain a more natural gender ratio, where females outnumber males in a proportionate number for the species. To this extent, it was a mistake to form the first group of only males, which resulted in all of them dispersing shortly after their release, and none taking part in the breeding of the free population (2 males were killed and the others disappeared). Similarly the fourth group also had an unnatural ratio of 5 males to 3 females.

3. The age mix of a group is also very important. The group has to contain mainly young individuals (in the best case, 2-4 years of age for the majority, with only 1-2 older leaders) to survive and thrive in the wild. It is known that older animals have a harder time adapting to new conditions, and take longer to become settled. They also have a shorter overall life expectancy. Consequently, older individuals are not as useful in adding to the breeding success in released populations. Nevertheless, the second group in the Negev project contained one old female (17 years of age), that ended up dying in the enclosure before release and making no contribution to the survival of the population.
4. It is very important to keep wild animals in the pre-release enclosure long enough (not less than 5-6 months) for them to build a stable social structure that will be vital for their future life in the wild. In addition, their adaptation to the new environmental conditions begins while in pre-release captivity, and they need enough time to perceive the enclosure and surrounding area as part of their future home range. So, birthing young before release, when possible, is probably the most effective way for bonding the khulans not only to each other but to their new environment as well. In the Negev Desert only the second group stayed in the enclosure for a duration of 5 months, while the other groups were released after much shorter periods of confinement. As a result, realization of the second group was the most successful of all those released.
5. While forming groups for reintroduction, it is very important to take into consideration individual behavioural distinctiveness and not just genetics. When forming the fifth group (3 males and 5 females) in 1992, only genetic characteristics were considered in choosing the most suitable individuals. This resulted in only a single female and her young remaining in the area after release, while all the others dispersed and disappeared. This phase of the project had a negative outcome because of the mechanical "bag of genes" approach to forming the group. No recognition was given to the fact that each individual is a unique life with its own peculiarities of social behaviour.

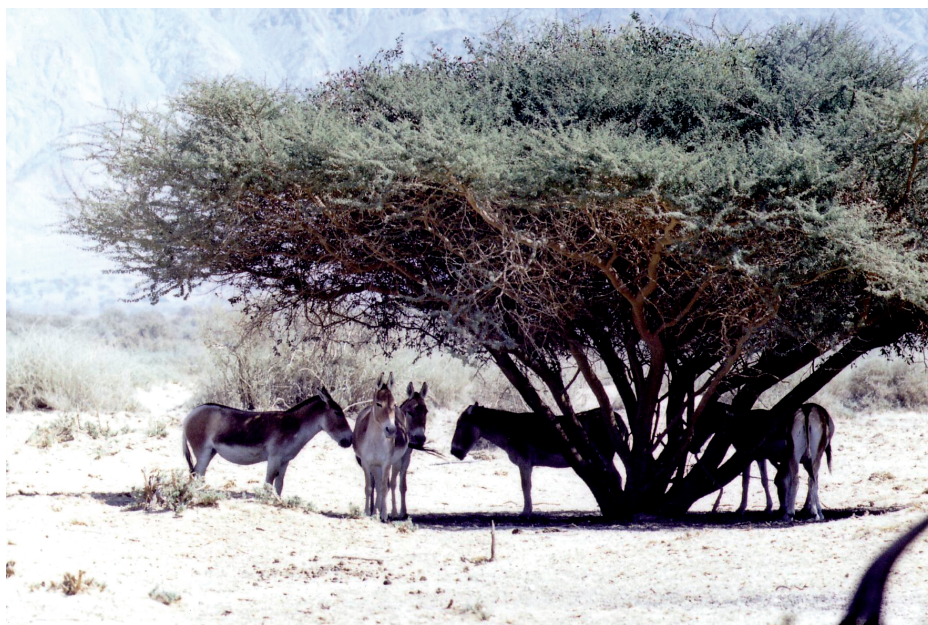


Fig. 2: Group of kulans (*E. h. onager* x *E. h. kulan*) in the Haibar Yotvata Nature Reserve (southern Israel), June 2005 (photo: D. BLANK).

In spite of the initial mistakes and the slow population growth at the beginning of the project, the breeding became more successful over time. Thirty-two young were born (20 males and 12 females) from 1985 through 1990, and 34 more were born from 1991 through 1993 (COHEN & 264

UALENZUELA 1994, SALTZ 1995). At present there are around 100 Asian wild asses in the Negev Desert and this number is quite stable (INRA Report).

After completion of the Negev reintroduction project in 1993, the number of *E. hemionus* still living in the Haibar Yotvata Reserve totaled 32 individuals. Unfortunately, the Israel Nature Reserves Authority no longer demonstrated interest in managing the herd to guarantee genetic diversity and viability; therefore this number began to decrease. There are currently 14 individuals (1 adult male, 2 yearlings and 11 females) and the future of the Haibar herd is very uncertain.

Interspecific aggression

Within the Haibar Yotvata Reserve, the Asiatic wild asses are kept with the African wild asses (*Equus africanus somalicus*) and two large species of antelope (*Oryx leucoryx* and *Addax nasomaculatus*). African wild asses were dominant over Asian wild asses, and it wasn't noted any aggression and even any reaction to each other during feeding. From time to time, the young of both species would try to play with each other, but the adults stopped these contacts immediately without incident. The situation changed significantly, however, when the fenced area was reduced 6 fold (from 12 to 2 km²), and we began to observe a number of cases of aggression between these two ass species. A noted example was when an African wild ass male began to attack an Asiatic ass female and young, kicking the young many times and eventually causing its death (May 2005).

As a rule, the male antelopes are the most dominant over the khulans, although female antelopes occasionally show dominance as well. Antelope aggression toward the khulans is demonstrated most often during feeding time, when hay is put out for all species within the area. The antelopes make threatening gestures with their horns, which is usually enough to force the khulans to back off and give up their places to the oryxes and addaxes. However, there are cases when some wild asses, usually young, approached too closely, resulting in the oryxes wounding the khulans with the tips of their horns. During the last 3 years, three young khulans and one adult male were killed because of these confrontations. In addition, two more young died with marks from blows that may be the result of attacks from antelopes, as well as stallions.



Fig. 3: Kulan and group of white oryxes in the Haibar Yotvata Nature Reserve (southern Israel), February 1999 (photo: N. PAKLINA).

Another problem is the aggression of khulans toward young antelopes. Khulans, especially females and young males, have showed interest in young antelopes 2 to 3 weeks of age and attack them whenever they have the opportunity. A female-hybrid (khulan x domestic ass) was transferred to the Haibar Yotvata Reserve from the Negev area where the khulans had been released. It was discovered that this female-hybrid would attack oryx newborns on sight, chasing them down and trampling them until they were dead. Four cases were documented of her killing young in this manner, two of which were observed from beginning to end. On 26th December of 2003, a female white oryx and her young (3-5 days old) were transferred to a large enclosure (50 m x 100 m) that also housed a male khulan (3 years old). Whenever humans entered the enclosure, the khulan would run to the far side of the fence and watch from a safe distance. When the young oryx was released, it ran out into the enclosure and away from the people. Immediately the khulan male ran to the young oryx - directly approaching the people - and using his front legs kicked the young so powerfully that within seconds the young had two broken legs.

Khulans also have been observed attacking addax newborns. An addax mother tried to protect her young from its khulan attacker, but the khulan kept running her off and trying over and over to approach the young from an unprotected side. In another case on 12th January 2005, a young khulan female galloped after a young addax and tried to kick it with her front legs. The mother addax attempted to protect her young by running after the khulan female but was not able to catch her. The young addax tried to get away from its enemy, and when that wasn't possible, it lay down on the ground and sprawled as flat as possible. With her teeth, the khulan female snatched up the small antelope by its head and shook it from side to side, then threw it to the ground. Again the young addax tried to run away and again the khulan pursued it. The khulan female was so fixated on kicking the small addax that she didn't pay any attention to either the addax mother or a car that followed behind trying to stop the pursuit. The chase lasted for 1.5 to 2 min. The baby addax survived however several days later it was attacked again. Over a period of 3 years, five attacks of newborn addaxes by khulans were noted: two lived without serious wounds, one was left alive but its hind leg was broken in two places, and the other two were found dead.

These observations support the simple idea that keeping khulans with large antelopes in the same enclosure has unfavorable consequences for all species involved.

References

- AHARONI, B. (1932): Die Muriden von Palästina und Syrien. - Z. Säugetierkd. **7**: 166-240.
COHEN, A.; UALENZUELA, C.R. (1994): The "pere" back in nature. Report for International Institute for Aerospace Survey and Earth Sciences, 36 pp. (unpublished).
GROVES, C.P. (1986): The taxonomy, distribution, and adaptation of recent equids. - In: Dr. Ludwig Reichert Verlag (ed.): Equids in the ancient world. - Wiesbaden, Germany: pp. 11-51.
GROVES, C.P.; MAZAK, V. (1967): On some taxonomic problems of Asiatic wild asses; with the description of a new subspecies (*Perissodactyla*; Equidae). - Z. Säugetierkd. **32**: 321-355.
MUSIL, A. (1927): The Middle Euphrates. - American Geographic Society, New York, 426 pp.
QUMSIYEH, M.B. (1996): Mammals of The Holy land. - Texas Tech Univ. press, Texas, 389 pp.
RYDER, O.A.; CHEMNICK, L.G. (1990): Chromosomal and molecular evolution in Asiatic wild asses. - *Genetica* **83**: 67-72.
SALTZ, D. (1995): Population dynamics of a reintroduced Asiatic wild ass (*Equus hemionus*) herd. - *Ecological Applications* vol. 5(2): 327-335.
SOLOMATIN, A.O. (1973): Khulan. - Nauka Publication, Acad. Sci. USSR, Moscow, 143 pp. (in Russian).
URI TSON (1990): The dream that was the embodiment in reality: the wildlife of Holy land - "Hai-Bar". Ar-Ain Publication, Israel (in Hebrew).

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