

## DID THE ARABIAN ORYX OCCUR IN IRAN?

BY

Anne DEVILLERS<sup>1</sup>

(Université Libre de Bruxelles, URT Centre d'Etudes Méditerranéennes  
(Oikoumene))

*His colour is even as that of milk in spring, only the cheeks about his face being black. (...) Sharp rise aloft the piercing points of his horns, black of hue, which are mightier than whetted bronze or chilly iron or jagged rock.*

*(Oppian, Cynegetica II, 445).*

**Abstract:** The Arabian Oryx is traditionally considered to have occurred in the Arabian Peninsula, Jordan, Syria and Iraq. No data suggest its presence east of the Euphrates and yet the species is occasionally found in the art of south-western and south-eastern Iran. The examples discussed come from glyptic material from Susa and from the chlorite vessels of the Jiroft region. These representations could be the indicator of small relict populations of Oryx trapped on the Iranian side of the Persian Gulf by the rise of sea levels in the early Holocene.

**Keywords:** Arabian Oryx, *Oryx leucoryx*, glyptic, Persian Gulf, Iran.

The extinction in the wild of the Arabian Oryx, *Oryx leucoryx*, then its subsequent reintroduction, has attracted public and scholarly attention to the species. Its range is traditionally considered to be limited to the Arabian Peninsula and the Mesopotamian semi-desert steppes of Jordan, Syria and Iraq, east to the Euphrates, regions where it persisted until the 19<sup>th</sup> century. No zoological or archaeozoological data indicate the presence of the

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Arabian Oryx east of the Euphrates. The species is found now and again, however infrequently, in the art of the ancient Near East, and an examination of these representations can bring additional information on its historic distribution. This is the case for Iran, where images of the Arabian Oryx are found in the glyptic of Susa and on the chlorite vases of Jiroft, beyond the generally accepted limits of the range. The object of this note is to discuss these extralimital occurrences.

In former times, large herds of this beautiful and emblematic animal roamed the vast desert areas in search of sparse pasture. Today, the species has disappeared in the wild and only subsists thanks to a captive breeding stock that was maintained in zoos across the world. After its extinction in 1972, large-scale efforts were made to reintroduce the Oryx, and programmes were set up in Saudi Arabia, the United Arab Emirates, Oman, Israel, Jordan and Syria in order to progressively reinstall it throughout its old distribution range (Pl. 1-2). The re-established wild populations have developed successfully, so that as of 2011, the species was retrograded from “Endangered” to “Vulnerable” status on the IUCN Red List. Its situation remains however extremely precarious due to continued illegal hunting and habitat reduction throughout its range.

The Arabian Oryx is a medium-sized antelope, the second largest antelope in the region, after the Bubal, now extinct, and the only Hippotraginae in Asia. It is a species highly adapted to the harshest, most arid environments of the deserts and semi-deserts of the Middle East. Its distinctive morphological traits, so different from the other horned animals of the area, usually make it possible to identify the Oryx, with a reasonable degree of certainty, in ancient art: a massive, stocky, almost bovid-like body, a long tail ending in a dark tuft of hair, long ridged horns, straight or slightly curved, either upright or slanted slightly backwards, measuring half to two thirds of the length of the body. Little is known of the behaviour and ecology of the species prior to its extinction in the wild. Most of the information available stems from the reintroduction programmes and the subsequent observation of the re-established populations (Wacher 1988: 102-103). The Arabian Oryx favoured habitats consist of various arid semi-desert and desert formations, such as stony plains, regs or hamadas, hard sands, sand dunes, wadis and arid steppes but the species can also use areas with thicker brush and even rocky hillsides. The main food source is provided by a variety of grasses, such as *Stipagrostis*, tubers, forbs, dwarf shrubs and ephemerals, shifting to scrubs such as *Sidlitzia*,

*Capparis*, *Tamaris* and *Citrullus* when the grasses become unavailable (Abu Jafar & Hays-Shahin 1988: 38; Groves 2011).

As a nomadic species, herds occupy an extensive home range, moving between preferred grazing areas<sup>2</sup>. Their movements are largely based on the occurrence of rain, which they can detect at vast distances; Oryx herds have been known to travel hundreds of kilometres in order to follow rainfall, and although preferring the open savannahs on the desert fringes, they will penetrate deep into the sands to exploit the ephemeral vegetation growth following a rainfall (Seddon & Ismail 2002; Groves 2011). Exploration and range extension can occur to a significant extent after rain, the animals moving into an area of recent rainfall once the wind direction has allowed them to detect it. And although they can withstand periods of drought up to 4 or 6 months, a single individual is known to have travelled 90 km in one night to find water. Individuals increase their range throughout their life span (Stanley Price 1988: 23-25).

#### Distribution of *Oryx leucoryx*

The Oryx occurs nowadays only in a fragment of its previous distribution range, confined to small protected areas in the Arabian Peninsula and in the Levant where it has been reintroduced since the 1980's. Prior to its extinction in the wild in 1972, the species probably occurred throughout most of the aridlands of the Near East. The limits of its former range are not well known, especially to the North and East. The core range of the Oryx seems to have centred on the Nefud and the Rub'al-Khali deserts in Saudi Arabia, extending north into Jordan, the Syrian Desert and Iraq (Syro-Mesopotamian Desert), where the last animal was shot in 1914. The British Museum specimens, collected from the Mesopotamian desert and the head of the Persian Gulf in the 19<sup>th</sup> and early 20<sup>th</sup> century, are probably the only known specimens from Iraq (Harrison 1968: 346). The situation in Syria is less clear. There were reports of sightings in the northern part of the Syrian Desert, including the Belka and Hauran, in the late 19<sup>th</sup> century, and a sighting near Jerud after the First World War. There is no evidence of the species' occurrence east of the Euphrates (Stewart 1963: 112-113; Harrison 1968: 346). In the early 20<sup>th</sup> century, it was believed that

<sup>2</sup> After reintroduction in Oman, a herd established a 3000 km<sup>2</sup> home range within a few years (Stanley Price 1988).

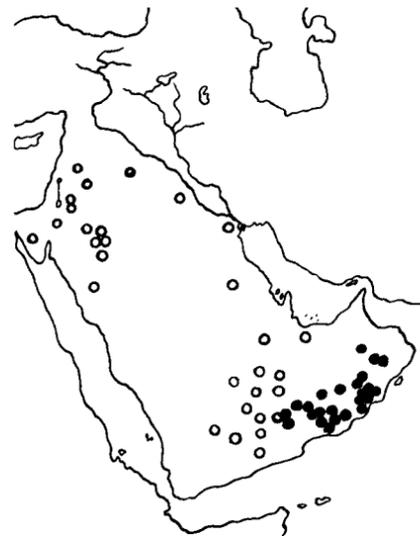


Fig. 1. Historic distribution of *Oryx leucoryx*, based on 19<sup>th</sup> and 20<sup>th</sup> century observations prior to the species' extinction in the wild (After Harrison 1968: 346).

the Oryx occurred in Persia, as three specimens had been presented to the London Zoological Society by Col. Pelly, British Resident at Bushehr on the Persian Gulf and by Col. E.C. Ross, British Consul at Bushehr, in 1872 and 1890 (Sclater & Thomas 1900: 54). These specimens seem however to have come from Oman, rather than Iran (Carruthers 1935: 159-160, Harrison 1968: 346). In the south-eastern Arabian Peninsula, where the last individuals survived in the wild<sup>3</sup>, the gravel plains around the Rub'al-Khali desert brought the species within a few kilometres of the coast. Harrison's distribution map (Fig. 2) summarises what is known of the species distribution before its extinction in the wild.

There are few paleozoological records for *Oryx leucoryx*, however, Uerpmann (1987: 81) notes that these span most of the known range of the species in the Peninsula and Jordan. Tentative identifications were made on antelope remains from Abu Hureyra on the Upper Euphrates (Moore, Hilman and Legge 1975: 75).

<sup>3</sup> The last individual was shot in Oman in 1972 (Stanley Price 1988: 18).



Fig. 2. Cylinder seal and imprint, Uruk/Djemdet Nasr period (Photo © Royal Museum for Art and History, Brussels; inv. O.1406) depicting an Oryx and a deer between a tree and an architectural motif. (H. 3.7 cm, diam. 3 cm)

### The archaeological evidence

Although no zoological or archaeozoological data indicate that the Arabian Oryx once occurred east of the Euphrates, or indeed further down the eastern coast of the Persian Gulf, an animal that can only be identified as an Oryx occasionally appears in ancient Iranian art. It should be noted that the species appears nearly as infrequently in the art of ancient Mesopotamia. Boehmer<sup>4</sup> (1965: 28, 33-36) notes its presence in the glyptic art of the Akkadian period and Oryx images are found earlier in Uruk, Djemdet Nasr (Fig. 2) and Early Dynastic glyptic<sup>5</sup>. Later images seem to be exceedingly rare, if not absent.

In Iran, images of the Arabian Oryx seem to be limited to early 4<sup>th</sup> millennium BC glyptic (Susa I period and contemporary), 3<sup>rd</sup> millennium glyptic and to the chlorite vessels from Jiroft (3<sup>rd</sup> millennium BC).

Archaic Iranian glyptic provides a vast and unending source of information and inspiration for the study of ancient fauna. The fondness of the Proto-Elamites and their predecessors for depicting animals and the realism with which they did it makes it possible to look at the carvings and

<sup>4</sup> Interestingly, in these instances, the Oryx nearly always appears as a small figure, spectator of a "combat scene" (Boehmer 1965: figs. 140, 160, 165, 173, 176, 191).

<sup>5</sup> Van Buren (1939: 47-48) notes 23 Oryx representations in Mesopotamian glyptic, ranging from 6<sup>th</sup> millennium Tepe Gawra down to the very beginning of the 2<sup>nd</sup> millennium. Only a few of these can be identified with any degree of certainty, most are rendered too schematically to draw a definite opinion.



Fig. 3. Stamp seal, reportedly from Luristan, Musée du Louvre, inv. AO 26.506 (After Amiet 1979: fig. 3).

propose identifications with a good degree of precision. The Arabian Oryx appears on a number of seals among which the ones discussed here offer the most diagnostic characteristics.

1. Rectangular stamp seal (Fig. 3), reportedly from Luristan (Amiet 1979: 337), representing on one side an architectural motif, and on the other a bird and a standing Oryx recognisable by its long straight ridged horns<sup>6</sup>. This seal is part of a lot acquired by the Louvre museum from Mohsène Foroughi (Frye 2000) in the 1970's, all of which Amiet identifies as being from Luristan (Amiet 1979: 335). He proposes to date these rectangular stamp seals to the late 5<sup>th</sup> or early 4<sup>th</sup> millennium, perhaps contemporary to Susa I and to Tepe Gawra XI (Amiet 1980: 196).  
Bibl.: Amiet 1979: fig. 3; 1980: 196.

2. Stamp seal from Susa (Fig. 4), dating to the Susa I level, depicts a standing Oryx surrounded by a cheetah, two birds and another smaller animal. A number of geometric shapes fill the remaining space. The Oryx is recognisable by its long fairly straight horns (although slanting forward

<sup>6</sup> Amiet identifies this animal as a deer, which is possible, but the extreme straightness of the horns and the regularity with which the notches on the horns are rendered resembles more the horns of an Oryx than the antlers of a deer, for which an effort is generally made to render the branching and the slightly sinuous overall aspect.

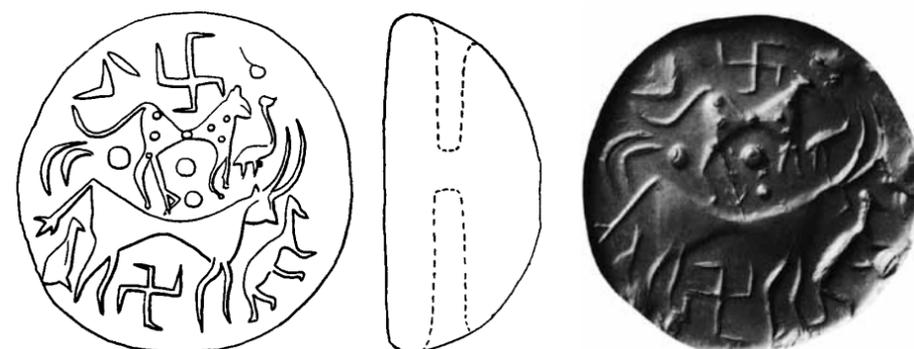


Fig. 4. Stamp seal, Susa I (After de Mecquenem 1934: fig. 19 & Amiet 1972: fig. 143).

in a curious way), long tail ending in a tuft and stocky body<sup>7</sup>. (H. 2.9 cm, diam. 6.3 cm)

Bibl.: de Mecquenem 1934: 187, fig. 19 / Pope 1938: pl. 17-F / Le Breton 1957: 92, fig. 8 / Amiet 1966: fig. 22; 1972: fig. 143; 1979: fig. 3; 1980: fig. 110 / Porada 1993: pl. 37-3.

3. This large cylinder seal (Fig. 5), a beautiful example of the skill of ancient seal engravers, is conserved at the British Museum. It depicts two Oryx, two wild goats and a number of geometric and plant motives. Collon (1995: 56) attributes this seal, made of a volcanic tuff, to the Proto-Elamite style of south-western Iran (c. 3000 – 2700 BC). The Oryx are shown with great detail, the horns correctly ridged on two thirds of their length and the long tufted tail hanging down. (H. 4.9 cm, diam. 2.9 cm)

Bibl.: Wiseman 1962: pl. 7a / Strommenger 1964: fig. 34 / Collon 1995: 56, fig. 38c.

4. Cylinder seal from Susa (Fig. 6), dated by Amiet to the 3<sup>rd</sup> millennium (Old Elamite period), carries a principal motif of two affronted pairs of wild goats between which one finds a crouching Mouflon and a crouching Oryx. The latter is once again recognisable by its straight ridged horns and long tufted tail.

Bibl.: Amiet 1980: pl. 48bis G.

<sup>7</sup> In Amiet 1980, the proposed identification for this animal is "caprid". This seems rather unlikely in view of the shape of the horns, the length of the tail and the overall, rather bovid-like, aspect of the body. The slight curvature of the horns could point to a bull, but when comparing this seals to others of the same type where bulls are clearly depicted, one sees that the horns of these are distinctly shorter and forward-pointing. The body-build is also rather stockier.



Fig. 5. Cylinder Seal, Proto-Elamite style, c. 3000-2800 BC, British Museum (Photo © Trustees of the British Museum; inv. BM.116720).

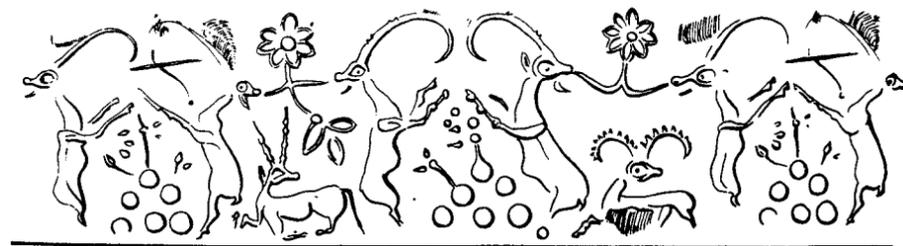


Fig. 6. Seal impression from Susa, Pre-Dynastic period, Teheran Museum, inv. 1935 S. 48 (After Amiet 1980: Pl. 48bis G).

In 2001-2002, severe rains provoked the unexpected discovery and subsequent pillaging of a number of cemeteries in the Jiroft region, among the material of which delicately crafted chlorite vessels were discovered. Jiroft is situated in the Jazmourian depression on the southern edge of the Iranian plateau. The discovery ascertained the provenance of this type of object, the existence of which was already known through isolated finds. Although these objects were not found in situ, the locality from which they originated is known, and subsequent excavations in the area were able to situate them within the 3<sup>rd</sup> millennium BC (Perrot & Madjidzadeh 2005; 2006).

At least two of the vessels forming this assemblage are decorated with extremely naturalistic and recognisable Oryx, as indeed identified in the original publications (Perrot & Madjidzadeh 2005: 137). The long tail, straight horns, ridged on two thirds of their length, and general build leave little doubt as to their identification (Fig. 7-8, Pl. 3-4).



Fig. 7. Jiroft, chlorite vessel H. 13.2 cm, diam. 10.3 cm (After Majidzadeh 2003: 32-33).



Fig. 8. Jiroft, chlorite vessel H. 18.8 cm, diam. 15 cm (After Majidzadeh 2003: 24-26).

Two possibilities can be proposed to explain the presence of the Oryx on Iranian artefacts. Either these representations show local fauna, in which case an Oryx population inhabited the dry coastal areas of Iran, at least until the 3<sup>rd</sup> millennium, or one could argue that the close ties both between Susa and the Mesopotamian area and between the Jiroft region and the opposite Arabian Peninsula brought these charismatic animals to the knowledge of local craftsmen who chose to depict them among their local fauna. Both points of view are valid, and it is the former possibility that is explored in this article.

#### Climate change and environmental factors

During the glacial maximum (18000-13000 BC) the decrease of world sea level by 120 to 130 m lower than nowadays left the Persian Gulf entirely emerged. Pollen diagrams for this time show the predominance of desert steppes and saline depressions throughout the Near East, testifying to a cold and dry ambiance. In the Arabian Peninsula, where the climate was excessively arid, the great ergs of the Nefud and the Roub al-Khali

were reconstituted. At the end of the glacial age, the generalised warming of the climate made sea levels rise rapidly. The Persian Gulf, due to its shallow depth, remained entirely emerged until about 11500 BC, then began to rise rapidly as of 11000 BC<sup>8</sup>. Around 8000 BC, the waters covered about one third of their present day surface, effectively separating the Arabian Peninsula from the Iranian coast. The Gulf was fully inundated by 5000 BC (Sanlaville 2000: 176-178; Wilkinson 2003: 23-24).

Throughout the Early Holocene, the climate of the Near East became progressively warmer and more humid, until reaching present-day conditions around 11000 BC (Wilkinson 2003: 20). This trend was interrupted by a number of cold and dry episodes, the severest and longest of which, the Younger Dryas (10800 to 9500 BC), saw a return to the climatic conditions of the last glacial maximum, with the steppes and deserts progressing to the detriment of the tree species (Sanlaville 2000: 178). During the Holocene climate optimum, between 9500 and 4000 BC, the climate became progressively warmer and wetter than nowadays. A strong increase of tree pollens is observed on the palynological diagrams from the Ghab and the Houlé in the Arabian Peninsula, testifying to much more humid conditions, with in places a rather dense vegetation cover. A dry and windy episode, similar to the Younger Dryas, but shorter and less intense, saw a return to more arid conditions in the region between 6900 and 6400 BC (Sanlaville 2000: 179). As of 4000 BC, the climate fluctuated around present-day values, with a series of droughts between 3200 and 3000 BC, and around 2200 BC (Roberts 1998: 162-163).

With the Persian Gulf emerged, the desert fauna of the Arabian Peninsula found no obstacle to hinder its extension all the way to the foot of the Zagros Mountains. The Oryx in particular, highly adapted to the desert, with its habit of roaming vast distances in the pursuit of localised rainfalls and subsequent vegetation growths, would have likely ventured most readily into the arid plains left by the drying out of the Persian Gulf. The former sea-bottom appears to have been occupied by fields of dunes and sand flats through which the Euphrates and the Tigris traced their ways<sup>9</sup>. When

<sup>8</sup> The shoreline receded at an average rate of about 140 m per year (Wilkinson 2003: 24).

<sup>9</sup> On the landscape of the emerged Persian Gulf, Wilkinson (2003) notes that: "Teller and colleagues (2000) suggest that the extension of the Tigris and Euphrates rivers formed part of a marshy, lake-dotted environment... This vast lowland must have included large

sea levels rose again, small populations may have been trapped on the Iranian side. Human pressure and habitat deterioration would have then progressively driven these to extinction.

The extreme south-western and south eastern parts of Iran, where we postulate the presence of the Oryx, is constituted of the coastal lowlands along the Persian Gulf, a fairly narrow strip featuring mangroves, sand dunes and salines, and of the somewhat elevated calcareous terraces further inland that support a very poor savannah and pseudo-savannah vegetation, beyond which the Oryx would not have ventured. Zohary (1973) describes this vegetation zone as the *Acacietea flavae iranica*, one of the habitat types of the tropical deserts and savannahs that make up the Sudanian and sub-Sudanian vegetation zone, found in a wide belt, the width of which varies with topography, along the coasts of Iran and the Arabian Peninsula (Pl. 5). There is little inter-specific competition between wild grazing species in the Oryx's primary range, as diets and grazing habits differ greatly. Grazing competition is only an issue with goats, but the habitats of these species do not usually overlap<sup>10</sup>. This factor would thus not have been an impediment to the temporary colonisation of the eastern shores of the Persian Gulf by the Oryx.

The flora of this region, where the high temperatures and limited rainfall produce a tropical desert climate, is often comprised of *Acacia* associations and is generally xerophytic. In this respect, southern Iran has much in common with the Arabian Peninsula and the steppes, sand dunes, salines and desolate hamadas of Iran are strongly reminiscent of the Arabian habitats. It must also be noted that a number of plants are found on both sides of the Gulf of Oman, having crossed over in large numbers when eastern Arabia was connected to mainland Iran (Zohary 1973: 14, 37, 239, 253). The climate and vegetation at the end of the 4<sup>th</sup> and during the 3<sup>rd</sup> millennium BC would have been similar to what it is nowadays (Rossignol-Strick 2003).

areas of desert, because palaeoclimatic proxy data is unanimous in demonstrating that conditions were both colder and drier at this time".

<sup>10</sup> Stanley Price 1989, p. 212.

## Conclusions

Ever since the discovery by western taxonomists of the Arabian Oryx in the 18<sup>th</sup> century, evaluations of its historical range have regarded the Euphrates as its eastern limit. The relative impermeability between disciplines makes the use of the iconographical medium a difficult resource for biologists attempting to ascertain historic distribution ranges. This medium can however provide valuable, and to a certain extent, reliable, information (Devillers 2008). In the case of the Arabian Oryx, its ephemeral appearance in 4<sup>th</sup> and 3<sup>rd</sup> millennium iconography of south-western and south eastern Iran, an area environmentally suitable for the species, should be taken into account. Although arguments can be advanced against this interpretation, it now seems difficult to exclude the coastal regions of Iran and their hinterland from the historic range of the Arabian Oryx.

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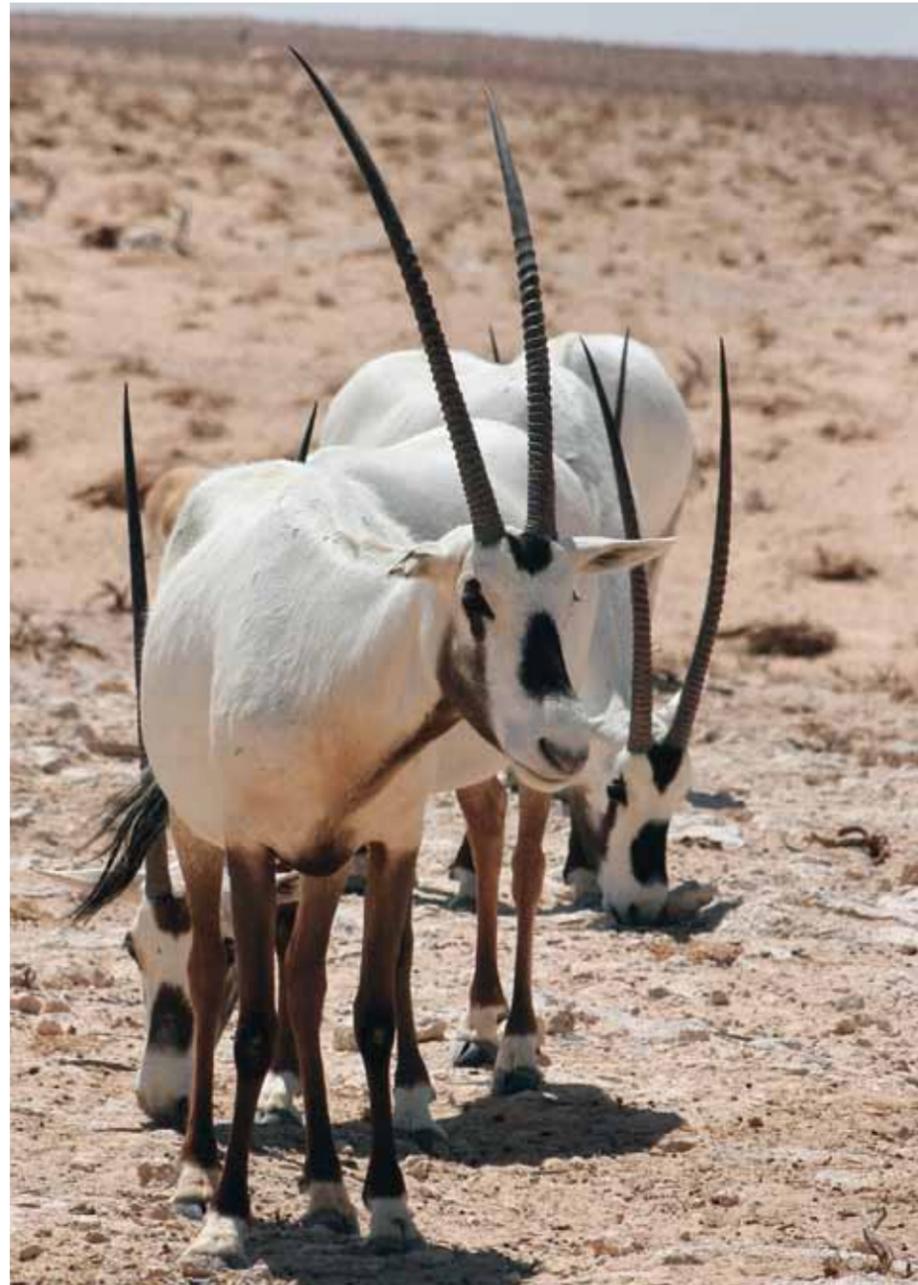
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Pl. 1. Reintroduced Oryx in Al Talila Wildlife Reserve, Palmyra, Syria.  
Photo by the author.



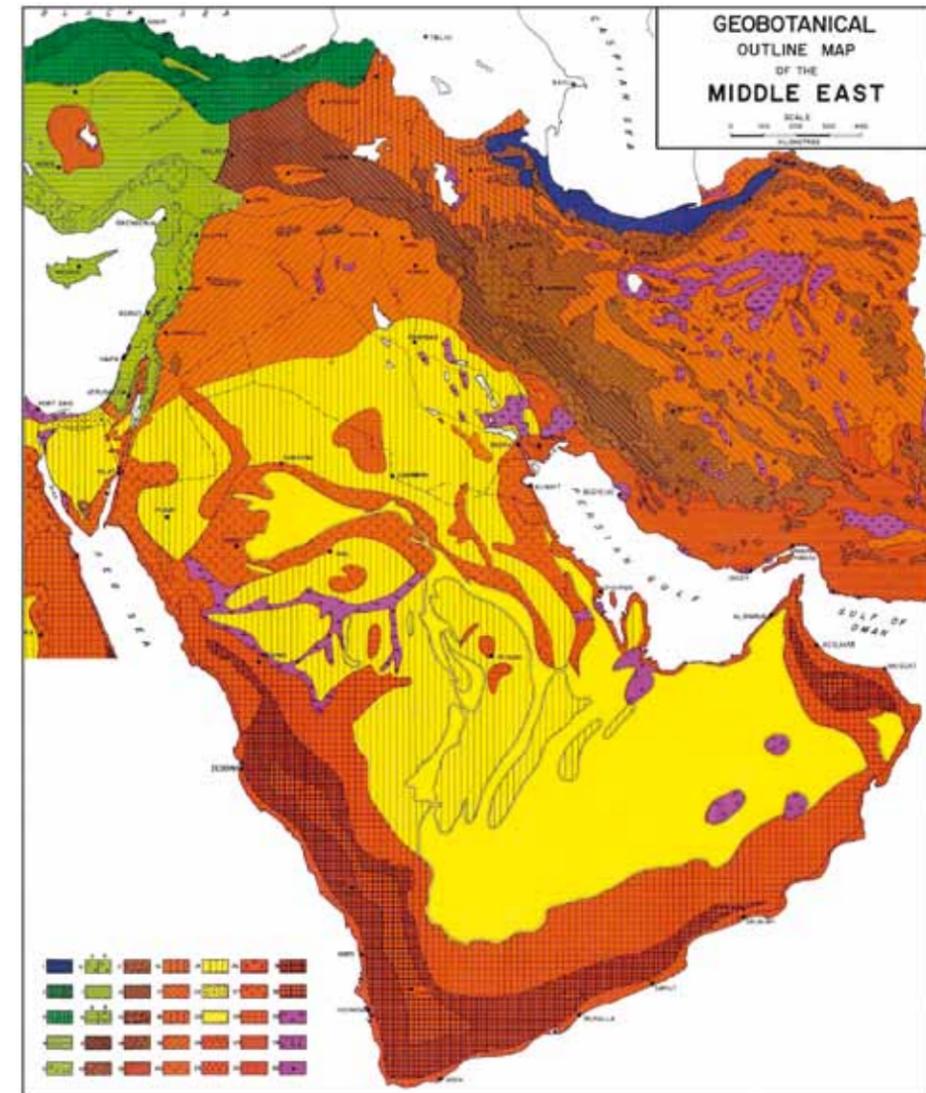
Pl. 2. Reintroduced Oryx in Al Talila Wildlife Reserve, Palmyra, Syria.  
Photo by the author.



Pl. 3. Jiroft, chlorite vessel H. 13.2 cm, diam. 10.3 cm (After Majidzadeh 2003: 32-33).



Pl. 4. Jiroft, chlorite vessel H. 18.8 cm, diam. 15 cm (After Majidzadeh 2003: 24-26).



Pl. 5. Geobotanical map of the Middle East (Zohary 1973). The Sudanian and Sub Sudanian vegetation area (tropical deserts and savannahs) is shown in darker red, forming a belt along the coasts of the Arabian Peninsula and Iran.

