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Preistoria e storia del Sahara
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Centro Studi
Luigi Negro

3

1990

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Late Palaeolithic Ungulate Fauna and Landscape in the Plain of Kom Ombo

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Riassunto

Nel 1934 P. Gaillard ha pubblicato un resoconto dettagliato sui resti di fauna nei siti archeologici della piana di Kom Ombo. L'autore ritiene che tra i frammenti ossei si siano potute riconoscere tre specie di grandi bovidi (*Bos primigenius, Bos brachyceros* e *Bubalus Vignardi*) e due equidi selvatici (*Equus asinus, Equus caballus*). Nel 1962-63 dalla stessa località si sono potuti ottenere altri esemplari di fauna, mentre negli ultimi venti anni, le nostre conoscenze sulla variazione degli scheletri degli ungulati fossili sono notevolmente aumentate. In considerazione di questi sviluppi, il materiale di studio di Gaillard è stato rivalutato. Inoltre, l'ecologia della fauna ungulata viene utilizzata per proporre un'ipotesi di ricostruzione del paesaggio di Kom Ombo.

Summary

In 1934, C. Gaillard published a detailed account on faunal remains from archaeological sites in the Plain of Kom Ombo. According to him, three large bovid species (Bos primigenius, Bos brachyceros *and* Bubalus Vignardi) *as well as two wild equids* (Equus asinus, Equus caballus) *could be recognised among the bone fragments. In 1962-63, additional faunal samples from the same locality became available, whereas in the last two decades, our knowledge of the variation in the skeleton of fossil ungulates has improved considerably. Gaillard's study material has been re-evaluated in view of this development. Furthermore, the ecology of the ungulate fauna is used to make a tentative reconstruction of the Kom Ombo landscape.*

Résumé

En 1934, C. Gaillard a publié une étude détaillée de la faune trouvée dans les sites archéologiques de la plaine de Kom Ombo. D'après lui, trois espèces de grands bovidés (*Bos primigenius, Bos brachyceros* et *Bubalus Vignardi*) et deux équidés sauvages (*Equus asinus, Equus caballus*) étaient identifiables dans les fragments osseux. En 1962-63 on put disposer d'un échantillon de faune complémentaire provenant des mêmes lieux, et d'autre part nos connaissances sur la variabilité dans les squelettes des ongulés fossiles ont fait des progrès considérables. Le présent article reconsidère l'étude de Gaillard à la lueur de ces développements récents. En outre, il tente une reconstitution du paysage de Kom Ombo, basée sur l'écologie des faunes d'ongulés.

1. *Introduction*

Since the pioneering investigations of Vignard in the 1920s, archaeologists have been aware that the Plain of Kom Ombo (Fig. 1) was very rich in archaeological sites. Vignard not only made large surface collections of stone tools that led to the description of lithic industries such as the Sebilian (Vignard 1923, 1955), he also collected the associated faunal remains which were reported in detail by Gaillard in 1934.

Subsequent to Vignard's departure from Egypt in 1924, little or no serious archaeological or geological investigations of the area were carried out and the Kom Ombo Plain was progressively levelled and brought under irrigation from the Aswan Barrage for cotton and sugarcane. The levelling of the surface and the construction of the irrigation ditches destroyed or obliterated many of the sites described by Vignard (Churcher, 1972: 5).

In 1960 it was decided to level the remainder of the irrigable land and to settle on these reclaimed lands the people to be displaced from Egyptian Nubia to the south by the construction of the High Dam at Aswan. UNESCO encouraged and sponsored an attempt to salvage the archaeological sites of Nubia that would be flooded by the creation of Lake Nasser or its associated works, including the sites located on the

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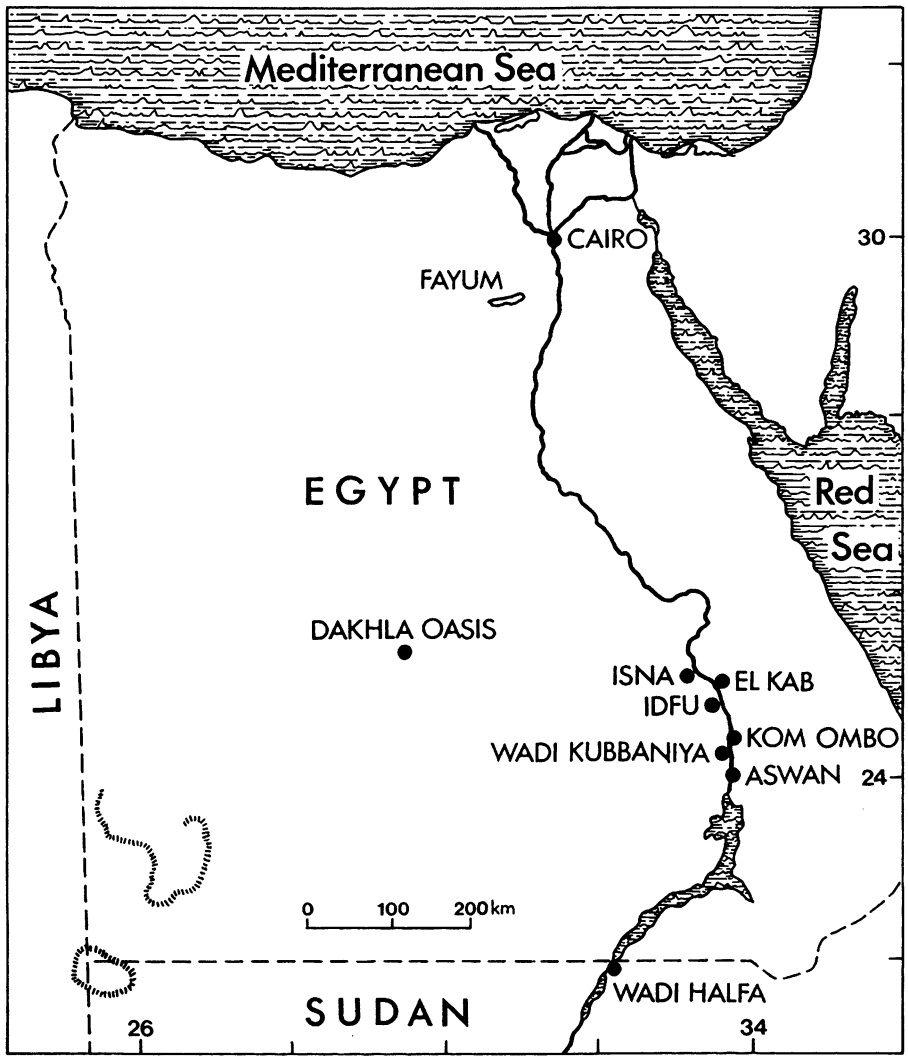


Fig. 1. Location of the sites mentioned in the text.

Kom Ombo Plain. The two expeditions that carried out the Kom Ombo salvage during the winter of 1962-63 were the Yale University Prehistoric Expedition (Dir. C.A. Reed) and the Canadian Prehistoric Expedition to Nubia (Dir. P.E.L. Smith). The faunal remains recovered by the Yale Expedition are briefly dealt with by Reed and Turnbull (1969), those collected by the Canadian Expedition have been described in detail by Churcher (1972).

Since Gaillard's study of the faunal remains from Kom Ombo in 1934, our knowledge of vertebrate life in Upper Egypt during Late Palaeolithic times has increased largely through contributions by Churcher (Kom Ombo, 1972), Gautier (Wadi Halfa area, 1968; Idfu, Isna, 1976; Elkab, 1978), Gautier *et al.* (Wadi Kubbaniya, 1980) and Gautier and Van Neer (Wady Kubbaniya, 1989) (Fig. 1). These and other studies (e.g. Degerbol, 1970; Peters, 1986a, 1986b; Gautier, 1988) have demonstrated that osteomorphological and osteometrical variation within fossil and recent ungulate populations has been underestimated. In view of this, we thought it useful to present an updated list of the faunal sample studied by Gaillard, with emphasis on the ungulate remains. The tentative reconstruction of the landscape near Kom Ombo is based on this group of mammals.

2. *The Late Palaeolithic ungulate fauna of Kom Ombo Plain*

With the exception of the hippopotamus bones, the faunal remains identified by Gaillard (1934) were still available when we visited the Musée Guimet d'Histoire naturelle at Lyon in 1982. Tab. 1 presents an updated list of this fauna. The mollusc genus *Nodularia* is now included in *Caelatura* (Mandahl-Barth, 1954). Gaillard's separation of *Clarias*

anguillaris and *Clarias lazera* (now considered a junior synonym of *C. gariepinus*; see Teugels, 1982) on the basis of differences in ornamentation of skull roof fragments cannot be maintained (Teugels, 1982). The lower jaw assigned by Gaillard to *Hyaena crocuta* race *spelaea* fits very well with that of present-day spotted hyaena, *Crocuta crocuta*.

Equus africanus or wild ass is represented by cranial and postcranial bone fragments in all Kom Ombo collections (Gaillard, 1934, «*Equus asinus*»; Reed and Turnbull, 1969, «*E. asinus*»; Churcher, 1972, «*E. asinus cf. africanus*»). Zoogeographical evidence suggests that we are dealing with the Nubian subspecies of wild ass (*E. a. africanus*, fig. 3b), of which a few individuals still might occur in the southeastern Egypt (Osborn and Helmy, 1980: 471, fig. 147).

According to Gaillard (1934: 23-24), the faunal sample also comprised a lower molar and an incomplete mandible with P2 *in situ* from a true horse, «*Equus caballus*». However, the morphology of these specimens compares better with that in mandibular teeth of asses (see also Churcher, 1972: 51). Therefore, they should be included in the wild ass material. In his publication, Gaillard also figured an upper third molar of a Solutrean horse (1934, pl. 2, fig. 7), which is erroneously interpreted by Churcher (1972: 50) as evidence for a true horse in the Kom Ombo area. As matters stand, the presence of wild horses in the Plain of Kom Ombo during Late Palaeolithic times can be considered unsubstantiated.

Remains of hippopotamus (*Hippopotamus amphibius*) are regularly found in archaeological contexts along the Lower Nile. Gaillard recorded teeth and limb bone fragments of hippo and assigned them on the basis of their size to «*Hippopotamus amphibius* race *major*», a large form of hippo known from Pleistocene deposits in Southwest Europe and North Africa. If we compare the values obtained by Gaillard (1934: 27-28) and Churcher (1972: 60-62) on hippo remains from the Kom Ombo Plain with those from recent specimens (e.g. Hooijer, 1950; Houtekamer and Sondaar, 1979; Faure, 1985), we see that most of the fossils fall within the size range of recent hippopotamus. Thus there is no reason not to assign the Kom Ombo specimens to the extant hippo, of which the last sight record for Egypt appears to be about 1816 (Flower, 1932: 444).

Fossil remains of large bovids have been ascribed by Gaillard to three species on the basis of differences in size and morphology: 1) a medium-sized, relatively shorthorned species, «*Bos brachyceros*», 2) the large, longhorned *Bos primigenius* or aurochs, and 3) a large, buffalo-relative called «*Bubalus Vignardi* nov. sp.». The creation of a new species is based on an incomplete right frontal bone with part of a horn core with a rather flat elliptical cross-section at the base (Fig. 2a) and a left maxilla with part of the M1, M2 and M3 *in situ* (Fig. 2b). In 1951, Bate included «*B. Vignardi*» in a genus that grouped all fossil long-horned African buffaloes and changed its name into «*Homoioceras vignardi*». As new faunal remains were collected at Kom Ombo, morphological variation within the fossil population became better known. Consequently Reed and Turnbull (1969) discarded Gaillard's identification of «*Bos brachyceros*» because the criteria on which he based the distinction between *B. primigenius* and «*B. brachyceros*» represented wear and not speciation. Furthermore, Churcher (1972: 89) correctly interpreted the size difference between both bovids as a case of sexual dimorphism[1]. Nevertheless, Reed and Turnbull (1969) and Churcher (1972: 89) still maintained «*Homoioceras vignardi*» as a valid species, although Churcher (1972: 87) notes that the broken right hornbase figured by Gaillard strongly resembles the relevant parts of another Kom Ombo skull assigned to a male *Bos primigenius*. When we reexamined the hornbase in Lyon, we noticed that its flattened appearance may be due to some postdepositional process. However, its curvature clearly resembles that of another Egyptian find described by Hilzheimer from Fayum (1917; see also Gautier and Van Neer, 1989: 135). Therefore, we are convinced that the Kom Ombo specimen also represents wild cattle. As to the maxilla fragment (Fig. 2b), it can be seen that the molars exhibit an advanced stage of tooth wear indicating that an old animal is involved. This and the fact that bovid teeth vary morphologically to a considerable extent gives us «the benefit of doubt» to add also this specimen to the wild cattle sample. Churcher's tentative identification of a large astragalus as

[1] How marked sexual dimorphism in wild cattle can be has been demonstrated by Degerbol (1970) with measurements of aurochs skeletons from Holocene deposits in Denmark.

«?*Homoioceras vignardi*» cannot be retained because similar sized specimens have been obtained from other Late Palaeolithic occurrences in Upper Egypt (cf. Gautier and Van Neer, 1989: 135).

The ungulate most frequently found in Late Palaeolithic and younger deposits is the hartebeest, *Alcelaphus buselaphus*. As far as we could ascertain, Gaillard correctly assigned all large antelope remains of Kom Ombo to «*Bubalus buselaphus*», now *A. buselaphus*. Bone remains of two similar sized antelopes that might have contributed to the sample, the addax (*Addax nasomaculatus*) and the scimitar-horned oryx (*Orix dammah*) have not been recognised. The northern hartebeest (*A. b. buselaphus*, fig. 3d) may have survived within historical times in vegetated areas of the Western Desert (Osborn and Helmy, 1980: 486).

The last ungulate species recognised by Gaillard in the Kom Ombo samples is «*Gazella Isabella*», which, according to recent classification, should be included in *Gazella dorcas* (Fig. 3a). A re-evaluation of the Late Palaeolithic *Gazella rufifrons* (red-fronted gazelle) remains from Esna and Edfu (Gautier, 1976) and from the Western Desert (Gautier, 1980) indicate that they pertain to *G. dorcas* (Gautier and Van Neer, 1989: 137). We agree with Gautier and Van Neer (Gautier and Van Neer, 1989: 137) that the horn core, tentatively assigned to *G. leptoceros* (slender-horned gazelle) by Churcher (1972: 120), should also be referred to *G. dorcas*. Dorcas gazelles once were plentiful in Egypt, but increased hunting pressure is rapidly reducing these animals to extinction (Osborne and Helmy, 1980: 507).

In addition, the 1962-63 bone samples produced some remains of Barbary sheep, *Ammotragus lervia* (Churcher, 1972: 121). Though Barbary sheep (Fig. 3c) still occurred in most of the Eastern Desert and in areas of rugged terrain in the Western Desert within historical time, recent observations indicate that only small populations survive in isolated areas (Osborn and Helmy, 1980: 524-525).

An ungulate species which is absent in Kom Ombo fauna but sometimes found in Late Palaeolithic sites along the lower Nile is dama, *Gazella dama* (Gautier and Van Neer, 1989: 138). Osborn and Helmy (1980) do not list dama among the contemporary land mammals of Egypt.

South of the first cataract in the Wadi Halfa area, Late Palaeolithic sites also yield remains of some other ungulate species: warthog (*Phacochoerus aethiopicus*), rhinoceros (*Diceros/Ceratotherium*), wild camel (*Camelus thomasi*) and kob (*Kobus kob*) (Gautier, 1968; Gautier and Van Neer, 1989: 157). With the exception of the wild camel, they are part of the Ethiopian fauna. Most likely, they were not present in the Kom Ombo area at the end of the Pleistocene.

On present evidence we assume that only six ungulate species occurred in the Kom Ombo region during Late Palaeolithic times: wild ass, hippopotamus, wild cattle, hartebeest, dorcas gazelle and Barbary sheep.

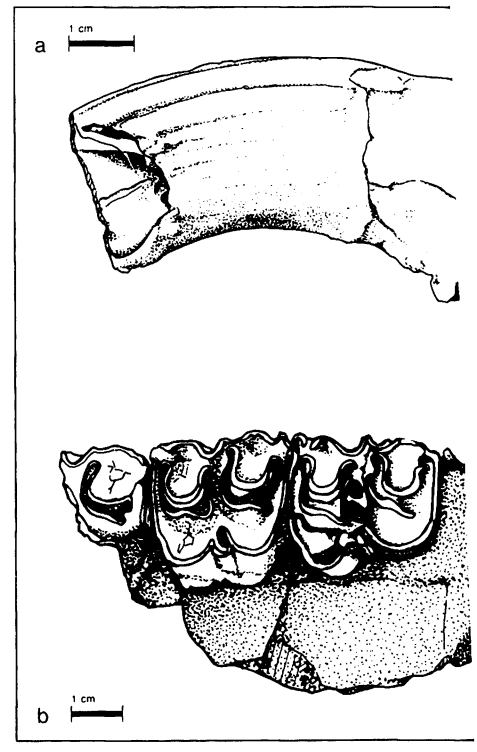


Fig. 2. Specimens assigned by Gaillard (1934) to «*Bubalus Vignardi*» but now included in *Bos primigenius*.
a) right frontal bone with horn core (dorsal view).
b) left maxilla with part of M1 and M2-3 (occlusal view).

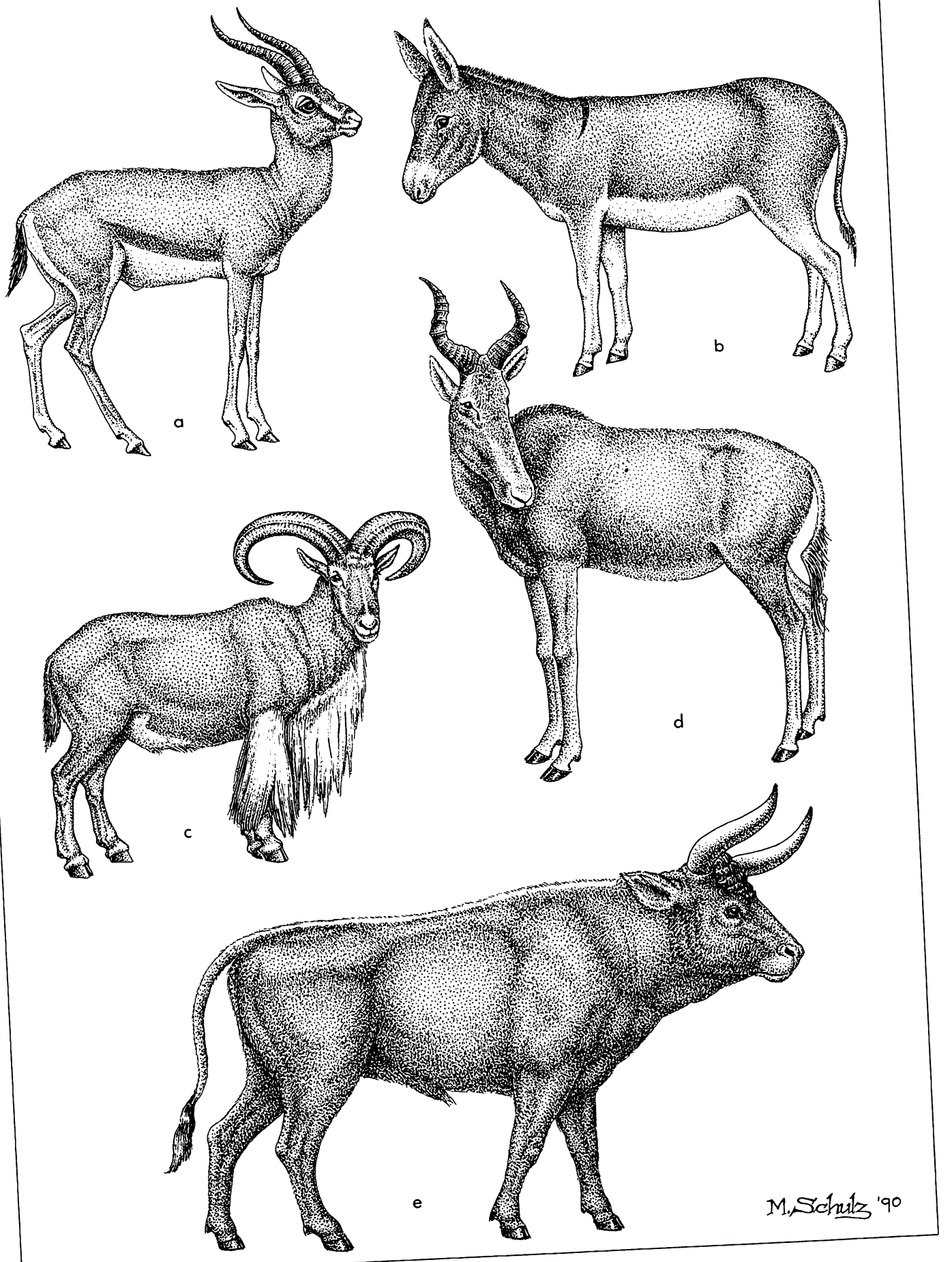
3. *Late Palaeolithic landscape in the Kom Ombo region*

The Plain of Kom Ombo lies on the right bank of the Nile and is centred around the town of Kom Ombo, which is located about 40 kilometres north of Aswan and 50 kilometres south of Idfu. The Plain covers an area of about 400 Km² and is almost completely surrounded by successive belts of Nubian sandstone, except for its western margin which is formed by the Nile. Two major drainage systems (Wadi Kharit and Wadi Shait), running out of the Red Sea Hills, enter the Plain at its eastern margin. The surface of the Plain, which lies more than 20 metres above the present Nile flood plain, is formed of interbedded silts and sands laid down by the ancestral Nile as it flowed in now-abandoned channels or by its tributary drainages (Gaillard, 1934: 4; Churcher, 1972: 6-7).

The habitat and food requirements of animals recognised in faunal samples may provide us with information about the local landscape. The requirements of the Kom Ombo ungulates can be summarized as follows:

1) Wild asses live in flat, arid, stony regions dotted with hillocks which are used as observation posts. They also prefer arid, remote wadis. Their food consists almost exclusively of grasses and the animals are capable of going without drinking for two-three days (Ziccardi, 1970; Groves, 1974: 110).

Fig. 3. Ungulate species of the Kom Ombo Plain.
a) Dorcas gazelle, *Gazella dorcas* (after Haltenorth *et al.* 1979: Pl. 18-3).
b) Nubian wild ass, *Equus africanus africanus*.
c) Barbary sheep, *Ammotragus lervia* (after Haltenorth *et al.*, 1979, Pl. 19-1).
d) Northern hartebeest, *Alcelaphus buselaphus buselaphus* (after Sclater and Thomas, 1894, vol. 1, Pl. 1).
e) Wild cattle, *Bos primigenius* (after Boessneck, 1964, Abb.3).


a
b
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2) Hippopotamus prefer pools and open stretches of permanent water with submerged sand banks or gently sloping sandy banks which allow them to rest during the day. Seasonal flooding may cause them to move temporarily from their established resting pools but they will return as the flood subsides. Hippopotamus are selective grazers, the types of grasses utilised depending on their availability (Smithers, 1983: 589).

3) The habitat requirements of wild cattle are not well known, but Wünschmann (1979: 377) states: «Ursprünglich waren wohl lichte Wälder, Tal- und Flußauen, Waldränder mit offenem Weideland und Parklandschaften aller Art von der Ebene bis in die unteren Gebirgslagen sein bevorzugter Lebensraum... Im Frühjahr und Sommer ernährten sich die Ure von Gräsern, Kräutern, Zweigen, Knospen und Blättern; im Herbst mästeten sie sich mit Eicheln; während der Wintermonate ästen sie Laubheu in den Wäldern»[2]. Therefore, we may assume that the habitat of wild cattle was a mosaic of riverine woodland with some undergrowth and of open grasslands with stands of trees. The bulk of its food consisted most likely of grasses.

4) Hartebeest are predominantly associated with open country, occurring on grassland of various types including floodplain grassland and extensive areas of vleis (low-lying ground where a shallow lake forms in the wet season), in semi-desert bush savanna and to a lesser extent in open woodland. Its diet consists mainly of grasses though browse may contribute to a significant extent (Smithers, 1983: 612).

5) Dorcas gazelle inhabits sandy and hard deserts, margins of oases, wadis and canyons in cliffs and mountain areas. In the Eastern Desert, acacias are staple food of *G. dorcas*. Leaves, thorns and flowers are stripped from accessible branches, and pods are eaten green or dry (Osborne and Helmy, 1980: 504-505). Cloudsley-Thompson and Ghobrial (1965) state that dorcas gazelle must drink, even in winter, and appear to inhabit areas «where some water, fresh or saline, or dew and succulent food are available, even if considerable distances have to be travelled in order to obtain them».

6) Barbary sheep lives in rocky desert mountain and cliff areas, but descends into wadis and plains to feed. The animals graze and browse and their food consists of a variety of desert plants including acacia, tamarisk and colocynth. They are independent of water (Haltenorth *et al.*, 1979: 93; Osborn and Helmy, 1980: 525).

Butzer and Hansen (1968: 184) described the major vegetation zones along the Egyptian Nile at Kom Ombo during the Late Palaeolithic as follows: 1) seasonally inundated floodplain, probably with woodland or tree-savanna; 2) periodically inundated wadi floodplains, probably with thorn savanna; 3) edaphically favoured zones with high water-table in minor wadis and adjacent to Nile floodplain..., probably with semi-desert shrub. They assume slightly moister conditions than today as well as occasional floods from the Red Sea Hills. To complete this picture, one must be aware that differences in amplitude of the inundations resulted in a type of floodplain which Passarge (1940: 112) describes as: «So kommt denn im Laufe der Zeit ein Netzwerk von Flußarmen, Inseln, Altwässern, Uferwällen, Sumpfniederungen, bei Niedrigwasser trockenlaufenden und nur bei besonders starkem Hochwasser überfluteten, breiten Schwemmlandflächen zusammen»[3].

The habitat requirements of the ungulates that once roamed the Kom Ombo Plain complete the landscape described by Butzer and Hansen. In Palaeolithic times, the margin of the Kom Ombo Plain adjacent to the Nile was bordered by riverine woodland (wild cattle) or even gallery forest, though areas with less dense vegetation may have been present that enabled animals to reach the river (hippopotamus). The floral pattern of the seasonally inundated floodplain may have been a mixture of acacia-woodland (wild cattle, hartebeest) along the major channels and in the large depressions, and of acacia-shrub with vast areas of grassland in parts of the Kom Ombo Plain that dried out more rapidly after the floods (hippopotamus, wild cattle, hartebeest, wild ass). The periodically inundated wadi floodplains and the edaphically favoured areas most likely maintained an acacia-shrub savanna (wild cattle, hartebeest, wild ass, dorcas gazelle). Even if water from the Red Sea hills reached Wadi Kharit and Wadi Shait at irregular intervals, it can be expected that these were vegetated by grasses and stands of acacias and other woody plant species

[2] «Autrefois son habitat préféré était sans doute constitué par des espaces peu boisés, des prés dans les vallées ou le long des rivières, les lisières de forêt, avec des prairies et du parkland de toutes sortes, depuis la plaine jusqu'aux premiers contreforts montagneux... Au printemps et en été, les aurochs se nourrissaient d'herbes, de tiges feuillues, de rameaux, de bourgeons et de feuilles. En automne, ils s'engraissaient avec des glands. Pendant les mois d'hiver, ils mangeaient les feuilles sèches dans les bois.» (*N.d.R.*)

[3] «Ainsi se constitue alors, avec le temps, un réseau de bras fluviaux, d'îles, d'eaux résiduelles, d'anciens rivages surélevés, de bas-fonds marécageux, devenant terrains secs lors des eaux basses, inondés seulement lors de crues particulièrement importantes, qui inondent alors aussi les grandes plaines alluviales.» (*N.d.R.*)

GAILLARD 1934		This study	
Molluscs			
Cleopatra bulimoides	1	*Cleopatra bulimoides*	1
Corbicula consobrina	1	*Corbicula consobrina*	1
Nodularia (cœlatura) nilotica	1	*Cœlatura nilotica*	3
Fish			
Clarias anguillaris	5	*Clarias* sp.	6
Clarias lazera	1		
Mammals			
Hyœna crocuta race spelœa	1	*Crocuta crocuta*	1
Equus asinus	17	*Equus africanus*	19
Equus caballus	2		
Hippopotamus amphibius race *major*	11	*Hippopotamus amphibius*	11
Bos brachyceros	1	*Bos primigenius*	12
Bos primigenius	9		
Bubalus Vignardi nov. sp.	2		
Bubalis buselaphus	9	*Alcelaphus buselaphus*	9
Gazella Isabella	4	*Gazella dorcas*	4

Table 1. Original and updated list of the Kom Ombo fauna (fragment counts)

Species	n	%
«riverain» species		
Hippopotamus, *Hippopotamus amphibius*	58	7.9
Wild cattle, *Bos primigenius*	248	34.1
Hartebeest, *Alcephalus buselaphus*	315	43.3
«desert» species		
(Nubian) wild ass, *Equus africanus (africanus)*	53	7.3
Dorcas gazelle, *Gazella dorcas*	53	7.3
Barbary sheep, *Ammotragus lervia*	1	0.1
TOTALS	728	100.0

Table 2. Absolute and relative frequencies of the Kom Ombo ungulates based on fragment counts in Churcher (1972) and in table 1.

(wild ass, dorcas gazelle, Barbary sheep). To conclude, the dominant vegetation of the Kom Ombo Plain was no doubt the acacia-shrub and grassland, though woodland or even gallery forest may have bordered the river, the main floodplain channels and the depressions that held water throughout the year. This reconstruction of the landscape compares well with the one proposed by Gautier and Van Neer (1989: 158) for the Late Palaeolithic occupations at Wadi Kubbaniya.

The faunal remains of the Kom Ombo Plain have been found in association with stone artefacts and are therefore considered kitchen refuse. If one compares the absolute and relative frequencies of the six ungulate species (Tab. 2), we see that the hunting activities of the site inhabitants focused on the plain-inhabiting, water-dependent ungulates (hippopotamus, wild cattle, hartebeest: 85%), whereas the more desert-adapted, water-independent species (wild ass, dorcas gazelle, Barbary sheep: 15%) were less frequently caught. Because most of the sites are located close to the Nile, the inhabitants were not particularly interested in the eastern Kom Ombo Plain because of the distance to the camp(s) (5 to 10 Km or more). Perhaps wild ass and dorcas gazelle were more often hunted towards the end of the dry season when surface water became scarce and the animals had to move close to the Nile valley.

As seen, species such as wild cattle, hartebeest and hippopotamus are linked with major drainage systems. Therefore it is not surprising that the distribution of these large herbivores in Egypt (and elsewhere) became more and more restricted after the introduction of herding and farming via the Nile delta some 7000 years ago (e.g. von den Driesch and Boessneck, 1985: 2). Not only food competition with the domestic ungulates cattle, sheep and goat, but also the destruction of suitable habitats as a result of irrigation practices, the cutting of trees for charcoal, etc. have contributed to their decline and extinction. Dorcas gazelle, Barbary sheep and maybe wild ass survived until now – though they are close to extinction – since part of the desert and/or mountainous habitats they occupy were unsuitable for man in terms of herding and farming.

Acknowledgements

The author is indebted to Dr M. Philippe of the Musée Guimet d'Histoire naturelle at Lyon for the opportunity to restudy the faunal remains under optimal conditions. Many thanks are due to M. Schulz for the excellent drawings. This study was financed by the I.W.O.N.L., Brussels.

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