

GAZELLA DAMA

1. TAXONOMY AND NOMENCLATURE



Gazella dama. Bou-Hedma National Parc. Tunisia.
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1.1. Taxonomy.

Gazella dama belongs to the tribe Antilopini, sub-family Antilopinae, family Bovidae, which comprises about twenty species in genera *Gazella*, *Antilope*, *Procapra*, *Antidorcas*, *Litocranius*, *Ammodorcas* (O'Regan, 1984; Corbet and Hill, 1986; Groves, 1988). Genus *Gazella* comprises one extinct species and from 10 to 15 surviving species, usually allocated to three sub-genera, *Nanger*, *Gazella* and *Trachelocele* (O'Regan, 1984; Corbet and Hill, 1986; Groves, 1988). *Gazella dama* is one of three species forming the group of giant gazelles (Groves, 1988) of sub-genus *Nanger* (O'Regan, 1984). The other two species, *Gazella soemmerringi* and *Gazella granti*, are linked to the semi-deserts, dry thickets, dry woodlands, steppes, and open savannas of northeastern and eastern Sudanian Africa. *Gazella dama* is polytypic, comprising three to nine recognised sub-species (Cano, 1984; Groves, 1988; Alados *et al.*, 1988; Dragesco-Joffé, 1993; Cano *et al.*, 1993; Kacem *et al.*, 1994; Abaigar *et al.*, 1997). The geographical variation appears clinal, with regions of steepening of the gradient (Groves, 1988); geographical variation is

somewhat obscured by individual variation (Brouin, 1950; Malbrant, 1952; Dragesco-Joffé, 1993). Usually three sub-species are distinguished: *Gazella dama mohrr* in the Atlantic Sahara, *Gazella dama dama* in the western and central Sahel, and *Gazella dama ruficollis* in the eastern Sahel (Cano, 1984; Cano *et al.*, 1993; Kacem *et al.*, 1994; Abaigar *et al.*, 1997). Uncertainty exists about the identity of the extinct Sahelian populations of Senegal, included in *Gazella dama dama* after the work of Sclater and Thomas (1898), and again recently by Kacem *et al.* (1994), in *Gazella dama mohrr* by Cano (1984), Cano *et al.* (1993), and Abaigar *et al.* (1997). This uncertainty contributes to doubts about possible geographical isolation of the Atlantic form *Gazella dama mohrr*, morphologically the most distinct. Kacem *et al.* (1994) suppose a hiatus in distribution between *Gazella dama mohrr* and *Gazella dama dama* in the south of Mauritania. This is not apparent on the map of distribution drawn by Trotignon (1975), but is confirmed, however, by an examination of the historical data he collected. In any event, possible future efforts to reintroduce, and even more to reinforce, populations must respect the geographical variation of the species as far as possible, even if its clinal character does not require differential treatment of sub-species. The only probable exception is that of *Gazella dama mohrr* whose geographical isolation and coastal desert specialisation are probable.

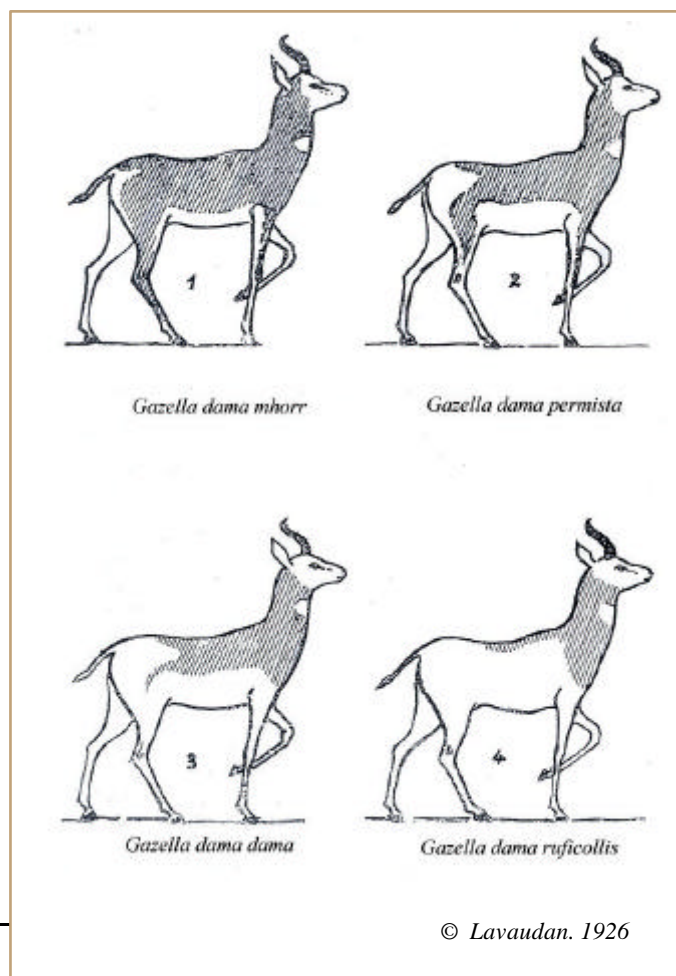
1.2. Nomenclature.

1.2.1. Scientific name.

Gazella dama (Pallas, 1766).

1.2.2. Synonyms.

Antilope dama, *Cerophorus dama*, *Cemas dama*, *Antilope nanguer*, *Gazella nanguer*, *Antilope mhorr*, *Nanger mhorr*, *Gazella mhorr*, *Gazella mohr*, *Antilope*



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mhoks, *Antilope dama*, var. *occidentalis*, *Antilope ruficollis*, *Gazella ruficollis*, *Antilope addra*, *Antilope dama*, var. *orientalis*

1.2.3. Common names.

English:	Dama Gazelle, Addra Gazelle
French:	Gazelle dama, Biche-Robert, Mohrr, Gazelle mhorr, Mohor, Gazelle mohor, Nanguer (Buffon), Ména, Grande gazelle
German:	Damagazelle
Tamachek:	Tenhert
Arabic:	Ariel, Ril
Tamashek:	Enir

1.2.4. Description

The coloration of the coat is quite variable, and is used to distinguish subspecies. The face and underparts are white in all described forms. The coat is bright white, with reddish brown or chestnut on the neck. However, as one travels from east to west through this species' range, the extent of coloration increases dramatically, with the western-most subspecies being almost completely red except for the undersides and rump. All races have a small white patch on the throat. The face has relatively few markings, being completely white in eastern subspecies, but with red cheek patches and thin black stripes running from the eyes to the corners of the mouth in the western subspecies - the Mhorr gazelle. The body is supported by thin legs, and the neck is long and slender. The horns are found in both sexes, though generally larger and thicker in males. They are "S" shaped, slanting backwards, then curling upwards. The tail is short and white, with a sparse fringe (Mallon & Kingswood 2001).

TL :	95 - 165 cm
T:	26 - 35 cm
H :	90 - 120 cm
Weight:	(male) 40-75 kg (female) 35-40 kg
Horns :	25-35 cm

2. BIOLOGY OF THE SPECIES

2.1. General Biology

2.1.1. Habitat.

Characteristically, the Dama Gazelle has a mixed diet of grazing gramineous or non-graminid herbaceous plants, and of browsing the foliage of ligneous species, which play a particularly important role in its ecological requirements (Newby, 1974). In the Sahelian region the trees and shrubs that are preferentially browsed comprise *Acacia senegal*, *Acacia raddiana*, *Acacia erhenbergiana*, *Maerua crassifolia*, *Capparis decidua*, *Capparis corymbosa*, *Cadaba farinosa*, *Boscia senegalensis*, *Guiera senegalensis*, *Grewia villosa*, *Grewia tenax*, *Balanites aegyptiaca*, *Chrozophora senegalensis*, *Leptadenia pyrotechnica*, and *Commiphora quadricenta*. The forbs, frutescents, and grasses grazed include *Limeum viscosum*, *Monsonia senegalensis*, *Boerhavia repens*, *Cucumis melo*, *Tephrosia lupinifolia*, *Tephrosia obcordata*, *Indigofera aspera*, *Tribulus terrester*, *Tribulus ochroleucus*, *Borreria radiata*, *Blepharis linariifolia*, *Commelina forskalaei*, *Eleusine flagellifera*, *Cyperus gemenicus*, *Aristida mutabilis*, *Aristida pallida*, *Schmidtia pappophoroides*, and *Panicum turgidum*, (Brouin, 1950; Malbrant,



1952; Newby, 1974; Grettenberger and Newby, 1986; Dragesco-Joffé, 1993). The gazelle also consumes the pods and flowers of *Acacia spp.* (Dragesco-Joffé, 1993). Its water needs are met in part, as for many other Sahelo-Saharan species, by the wild melon, *Colocynthis vulgaris* (*Citrullus colocynthis*) (Newby, 1974; Dragesco-Joffé, 1993).

The presence and density of trees appear to condition the distribution of the Dama Gazelle (Grettenberger and Newby, 1986). Its close connection with acacia woodlands and their accompanying flora has been noted by numerous observers in various parts of the range (Sclater and Thomas, 1898; Lhote, 1946; Brouin, 1950; Morales Agacino, 1950; Malbrant, 1952; Valverde, 1957; Kowalski and Rzebik-Kowalska, 1991; Dragesco-Joffé, 1993; Kacem *et al.*, 1994). In Niger, Grettenberger and Newby (1986) documented its strong preference for the major wadis and their flood plain, secondarily for the steppes of zones of water movement and the dunes invading the wadi beds, environments in which trees remain in better condition during the dry season and bring shade and fodder in the hot season. In the same way, in the Atlantic Sahara, *Gazella dama mohrr* mainly occupied wadis dotted with acacia woods of variable density (Morales Agacino, 1950; Valverde, 1957). There they ate the leaves of *Acacia seyal* with a complement of leaves from *Maerua*, *Calotropis*, *Balanites*, *Salvadora*, *Leptadenia*, and *Ziziphus*.

However, in the Northwestern part of its range, in areas lying some 10-50 km from the Atlantic Ocean, *Gazella Dama* were found in dense wooded steppes without acacia (Cuzin 2003). In the Saharian Northwest, *Gazella Dama* probably fed mostly on *Argania spinosa* foliage, in the same way as *Gazella dorcas* et *Gazella cuvieri* (Cuzin 1998). Nowadays, mostly because of poaching pressure, *Gazella Dama*'s distribution appears limited to areas where vehicule access is practically impossible : the inaccessibility of sites conditions probably now its repartition (Lamarque, com. pers., 2005).

2.1.2. Adaptations.

The Dama Gazelle is a desert/semi-desert species and is drought resistant. Most of its water is obtained from its plant food. It is both a browser and a grazer. The Dama Gazelle browses on various desert shrubs and acacias. In times of drought it also eats rough desert grasses.

Dama Gazelles occupied the same ecological zones as the Scimitar-horned Oryx, and both species ecology were very similar. Like most desert species, the Dama Gazelle is highly nomadic, ranging widely in order to obtain sufficient nutrition. In addition, these gazelles undertake large seasonal migrations, moving north into the Sahara desert during the rainy season, and retreating south into the Sahel during the dry season. To maximize the amount of food available, these gazelles may stand on their hind legs in order to reach leaves above the normal browsing height.

2.1.3. Social behaviuor

The social organization of Dama Gazelles is greatly affected by the seasons. Herds typically spend the dry season in the Sahel where they occur singly or in mixed groups of 10 - 15, composed of a dominant adult male, several adult females, and young. With the onset of the rainy season, they migrate into the desert, where, in the past, aggregations including males and females could include several hundred individuals. (Mallon & Kingswood 2001, AZA Antelope TAG). Male Dama Gazelles become territorial during the mating season

