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THE DOMESTIC LIVESTOCK RESOURCES OF TURKEY: NOTES ON DONKEYS

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ABSTRACT

Donkeys are an ancient component of Turkey's domestic animal guild and have been important in the country's economy for hundreds of years. Turkey is a probable centre of the early use of donkeys in breeding of mules. In 2009 there were almost 300 000 donkeys in the country but numbers are declining rapidly. Three distinct types are catalogued but very little is known about two of them and not much more about the widespread Anatolian type. Turkish donkeys are typical of the world population in morphology and colour and are generally of small size. Donkeys were used by both sides of the conflict in the Great War of 1914-1918. Employed historically as burden and riding animals these roles continue. Use as prime movers and powe sources for agriculture and for wheeled transport is not very widespread but there is some interest in their use for dietic milk. There are no breed societies and no conservation measures in place. Continued downward pressure on numbers (in spite of local increases due to reactions against the cost of mechanized replacements) will continue and will inevitably have a negative effect on an important part of Turkey's cultural heritage and its domestic animal biodiversity.

Key words: *Equus asinus*, mule, domestic animal biodiversity, morphology, work animals, coat colour.

INTRODUCTION

"He can live without man. But man can scarcely do without the labour, the sacrifice, the suffering of the donkey that has accompanied man since the dawn of time, in all weathers, humbly and patiently serving the most brutal of all animals." (Vieira, 2006).

Donkeys are an ancient component of Turkey's guild of domestic animals and have been important in the country's agricultural economy for hundreds of years. In common with much of the world in the 21st century, however, the donkey in Turkey has lost its status as a mainstay of the rural economy and has been replaced by mechanical means of transport and power. In a similar vein and again in common with the world status there is little information on this much abused beast of burden within the country.

In many developed countries the advent of the "conservation" ethos has resulted in many breeds of many domestic species being described and new ones discovered. In parts of Europe donkeys, in part because they are fast disappearing, have been described in some detail (Kugler *et al*., 2008). Turkey has a well established and successful programme of classification, characterization and conservation of its major food producing domestic animals (Arat, 2011) and although the horse is also included in this programme the donkey is not nor is it covered by any related activities. There is very little published information on the species in Turkey but in view, certainly, of its past and likely continuing importance for some sectors of the agricultural industry it would seem important to document that which is known about it. This paper attempts to do that through a review of the very limited literature and through particular studies carried out to provide information on the Turkish donkey's physical characteristics.

MATERIALS AND METHODS

This paper is based on reviews of the very limited literature on the donkey in Turkey, on interviews with key informants and donkey owners and on the personal knowledge of the authors. The section relating to physical description results mainly from studies carried out by the senior author between October 2010 and February 2011 in nine localities in south and southeast Turkey in an area covered by coordinates 41º06' to 37º09' N latitude and 43º44' to 40º44' E longitude. A total of nine linear measures was taken on 194 donkeys using a measuring stick and a specially graduated metal measuring tape (Sonmez, 1973). Colour and sex were determined visually and age estimates were provided by the owners. Mensural data were analysed with the Minitab 15 statistical software program. (Minitab, 2011).

RESULTS AND DISCUSSION

History and culture: A major historical reason for keeping donkeys in Turkey was for the breeding of mules. It is probable, indeed, that mules were first bred from horses and donkeys in Mesopotamia and Anatolia. One source considers that this occurred in the Third Century BC as horses from the north and donkeys from

the south met in this area (Kugler *et al*., 2008) and possibly about 3000 years after donkeys were first domesticated (Rossel *et al*. 2008). Whereas the archaeological evidence is not clear ancient texts attest to the fact that mules were at least present in Anatolia as early as the first part of the Second millennium BC as both carriage and riding animals for important people (Michel, 2004) although this does not necessarily mean they were bred there. In modern Turkey the donkey continues to be of cultural importance in its representations in folk tales and dances over much of the country (Aydin, 2012).

Numbers: In the early 1960s the donkey population was almost two million head. This number was maintained throughout the decade but in the 40 years since 1970 there has been a consistent decline in the standing stock (Figure 1). The 2009 population of 234 182 was more than 25 per cent less than that of 296 114 recorded for 2007 (TSI, 2011). This long term decline in numbers is symptomatic of the declining importance of donkeys in Turkey's agricultural economy and it seems certain that the downward trend will continue in the future. Donkeys are nonetheless far more numerous than horses (population about 160 000 in 2009, Yilmaz *et al*., 2012) and mules (population about 51 500 in 2009, Yilmaz and Wilson, 2012).

Types: Three types of donkey are recognized in Turkey (FAO/DADIS, 2012).

The Anatolian type is found all over the country and not just on the central plateau and is usually grey or black in colour (Yarkin, 1962). The Merzifon or Marsovan, from the town and district of the same name in Amasya Province in the central Black Sea region is at risk. The Karakaçan type, presumably named after the Karakaçan nomads of the Balkans and Thrace is also considered at risk (FAO-DADIS, 2012): 'Karakaçan' is sometimes used as a slang word for donkey.

Physical description: Donkey owners are often small holders or poor people with few resources who cannot easily care for or feed their animals. Most donkeys therefore scavenge on what plant matter is available. Donkey foals especially are fed inadequately, fail to grow well, achieve only small adult size and have a reduced working life (Yilmaz and Ertugrul, 2011a).

Average height at the withers in the study carried out in east and southeast Turkey was 102.3 cm. There were significant differences between the withers height of males and females (Table 1) as well as in all eight of the other linear measurements that were studied. Igdir donkeys were slightly smaller than the east-southeast donkeys with a withers height of 99.1 cm and, in contrast to the latter, there were no significant differences between males and females in withers height nor in any of the other traits measured (Yilmaz and Ertugrul, 2011b).

Table 1. Descriptive statistics of some phenotypic traits of Turkish donkeys of both sexes

Sex	Trait (all measurements are in centimetres and provided as mean standard deviation)								
	Withers height	**Rump height**	**Body length**	**Heart girth**	**Chest depth**	**Chest width**	**Cannon bone circumference**	**Head length**	**Ear length**
Overall (n=194)	102.3±0.53	104.3±0.50	105.2±0.57	113.5±0.49	45.7± 0.30	29.5±0.24	13.6±0.08	48.7±0.22	21.9±0.14
Male (n=124)	102.7±0.66b	105.0±0.62b	105.2±0.74b	113.3±0.60b	45.9±0.37b	29.6±0.30b	13.6 ± 0.09b	49.0±0.27b	22.0±0.16b
Female (n=70)	99.7 ±0.58a	102.4±0.56a	103.1±0.65a	111.7±0.76a	45.0±0.35a	28.4±0.29a	13.3± 0.10a	47.5±0.32a	21.3±0.20a

Means in the same column with different postscripts differ significantly ($P < 0.05$)

Turkish donkeys are "typical" world donkeys. They exhibit the normal colouring with lighter coloured ones carrying the dorsal black stripe and shoulder cross and on many animals there are indications of the striping of the original progenitor on the lower legs (Figure 2). In the south and southeast Turkey morphological study 31.4 per cent of 194 donkeys were grey, 24.7 per cent were white, 23.7 per cent black and 20.1 per cent brown. In the Igdir area of eastern Turkey 54. 3 per cent of 94 donkeys were grey, 7.4 per cent white, 18.1. per cent black and 20.2 per cent brown (Yilmaz and Ertugrul, 2011b).

The data on size show that Turkish donkeys in general are around the middle of the range of sizes found in this species of domestic animal in several other countries around the world (Yarkin, 1962; Groves, 1974; Wilson, 1978; Aganga and Maphorisa, 1994; Pearson and Ouassat, 1996; Squance, 1997; Wilson, 1997; Fielding and Krause, 1998; Hutchins *et al*., 1999; Wilson, 2000; Yanez and Burgue, 2001; Ebangi, and Vall 2004; Kugler *et al*., 2009; Raziq *et al*., 2010). The main exceptions to the generally small size of donkeys are, of course, the Poitou breed that was long used in France for specialty breeding of mules (Camac, 1997) and the Martina Franca of Italy (Rizzi *et al*., 2011). Donkeys that are raised in the southeastern areas of Turkey are obviously influenced by Iraqi and Syrian donkeys as dam or sire although body

measurements and descriptions of those donkeys have not apparently been recorded. In this southeastern region, white is the commonest coat colour and donkeys are considerably larger than those in the remainder of Turkey. For future donkey breeding, donkeys from the southeast provide an opportunity to breed larger donkeys should these be required.

Use: Donkeys were used extensively by both the Ottoman and the Western armies in the Great War (1914-1918). Little is known of their actual use by the Ottoman forces but there is considerable information on their origins and employment by the Western allies. Donkeys served as both transport animals and companions and they were much appreciated as pets and mascots by the Australian and New Zealand Army Corps (ANZAC) at the battles that became known as the Gallipoli campaign that started in April and continued throughout the summer and autumn of 1915 (Bean, 1921). They were used to transport water and food to the front lines but also carried guns. Several donkeys transported from New Zealand on the troop ship Goslar were to be used for testing drinking water as it was believed that they would not drink poisoned water (Cochrane, 1992). The most celebrated role of donkeys in the Gallipoli campaign is, however, the transport of wounded men from the battle ground to the field hospitals: they were apparently trained to walk right up to the operating table and then reverse out of the tent without turning round (Bough, 2011).

Turkish donkeys are the classic and ubiquitous beasts of burden. They are – and for centuries have been - used as both riding and pack animals (Figure 3). They are also used as draught animals in agricultural operations and as sources of power for wheeled vehicles (Figure 4) although these roles are of somewhat lesser importance in the country as a whole than the riding and pack functions. They carry firewood, water, grain, hay and a multitude of other goods over short distances. They escort sheep flocks and carry the paraphernalia of shepherds and not seldom a weak newborn lamb which cannot follow the flock.

There are still considerable numbers of mules in Turkey. The donkey is, however, apparently not of much importance in mule breeding as most of these animals, according to local information provided to the senior author, are imported in to the southeast of the country from Iraq and Iran (Yilmaz and Wilson, 2012). This is reflected in the national mule population of 51 548 in 2009 (TSI, 2011), equivalent to more than 22 per cent of the number of donkeys and almost 31 per cent of the number of horses.

The demise of the donkey – and of other working animals – in Turkey, as elsewhere in the world, has been intimately associated with the increased and more widespread use of mechanical and electrical power (Yark n, 1962) and the (often inappropriate) drive to "modernization. There remain, however, some pockets of resistance to this generalization. In the municipality of Mardin in the southeast of Turkey, for example, donkeys are still used by the local authorities to collect household waste. Many of the streets of the mountain fortress are too narrow and twisty for the use of motor vehicles leaving donkey power as the best and most appropriate alternative. In 2010 the municipality sought to retire 10 of its 44 donkeys and was looking for replacements in the age bracket 2-3 years and of 125 cm withers height. Local prices immediately increased 3-fold as indigenous entrepreneurs saw an unusual market opportunity (Hurriyet Daily News, 2010). Similarly the prices of donkeys in Yozgat District in Central Turkey increased 7-fold in 2008 (from EUR 26 to about EUR 180) as many local people abandoned their tractors because of high fuel prices and reverted to the age-old and trusty beast of burden (Zaman, 2008)

A farm in the northwestern province of Kirklareli has 180 donkeys, of which 172 are female, has applied to the Ministry of Health for a permit to sell donkey milk. The owner of the farm does not intend to sell or give away milk until all formalities have been satisfied although he knows that in some areas of Turkey milk is already sold by other owners (Eurasianet, 2012). The eating of donkey flesh or food use of its products is contrary to the tenets of Islam (Turkey is a secular state but many of its people still profess to be Muslim) but donkey milk is closer to human milk in its composition than that of any other domestic animal. A recent study on the Jiangyue breed in Northwest China showed that donkey milk contained 9.53 per cent total solids, 1.57 per cent protein, 1.16 per cent fat, 6.33 per cent lactose and 0.4 per cent ash. Donkey milk had higher levels of Serine, Glutamine, Arginine and Valine and a lower level of Cysteine than cow or mare milk. It was considered that the unique nutritional characteristics of donkey milk gives it optimal potential as a new dietetic food and breast milk substitute (Guo *et al*., 2007). Similar conclusions to those made in Turkey have also been drawn in Italy (Polidoro and Vincenzetti, 2012).

Conservation measures and status: There are no formal nor informal, public nor private conservation measures in place. In view of the decline in numbers there is a risk that at least two of the three identified types (and probably of yet-to-be identified types) will become extinct in the near future.

The donkey has been an important member of the array of domestic animals in Turkey for many hundreds of years. Fulfilling a number of roles, the animal has lost or has a greatly reduced importance in many of these services as mechanized transport and electrical power have been increasingly used since the middle of the twentieth century. In the 50-year period 1961 to 2010 donkey numbers have diminished by more

than three-quarters and it can be assumed that, in view of the lack of government support or any official (or indeed unofficial) conservation measures the donkey population will continue to be driven to a very low level with consequential loss of domestic animal biodiversity. In spite of the general trends, however, some very limited temporal and spatial niches are occupied by donkeys and in some remote and deprived areas the animal will remain socially and economically of major value in the rural economy.

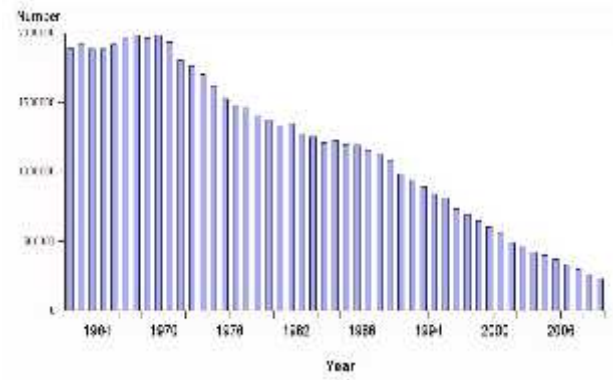

Figure 1Donkey numbers in Turkey, 1961-2009 (Source: FAO 1962-2010)

Figure 2Group of donkeys in eastern Turkey (note striping on legs of nearest animal)

Figure 3A pack donkey with a classic mixed load

Figure 4A donkey in the less usual role of wheeled transport

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