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SOME MORPHOLOGICAL TRAITS OF THE TARSUS FORK-NOSE DOG IN TURKEY

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Abstract

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This research is the first to document the morphology of the Tarsus Fork-nose Dog in Turkey. The purpose was to determine the morphological traits of this dog in different age and sex groups as raised in the South of Turkey. To this end, 24 male and 31 female Fork-nose were measured. Descriptive statistics gave the following means: live weight (LW) was 21.7 kg, withers height (WH) 48.5 cm, height at rump (HR) 48.5 cm, body length (BL) 49.1 cm, heart girth circumference (HGC) 64.0 cm, chest depth (CD) 20.8 cm, chest width (CW) 18.8 cm, cannon circumference (CC) 10.5 cm, and head length (HL) 20.7 cm respectively. Also the distributions of body coat color of the sampled Fork-nose were 52.7% brown, 23.6% brown-white, 14.6% black-white and 9.1% black. The Tarsus Fork-nose Dog is the only hunting dog in Turkey, and they it reaches its mature body size at two years of age.

Key words: Tarsus fork-nose, double-nose, morphological trait, body measurements, coat colour

Introduction

The Tarsus fork-nose dogs have a fully split nose, essentially resulting in a double nose, that is quite a rare feature in dog breeds. 'Fork-nose' describes a nose split vertically right down the middle, accounting for these particular dogs being described as 'fork-nose hunters' (www.thebreedsofdogs.com 2011). Something approaching a split appears to be normal for the nose of a dog. In most dogs, a band of skin and fur dividing the nose all the way to the dog's upper lips separates the nostrils vertically. Even though there are no researches to indicate whether the fully split double nose is a benefit or a hindrance, many people believe that the split nose increases the scent discrimination ability of a dog possessing it (en.wikipedia.org 2011) (Figure 1).

The Turkish sight hound, of which the Tarsus Fork-nose dogs are a subgroup, is generally located in the Province of Icel, Mediterranean region (Yilmaz, 2007; Yilmaz, 2008). Thus, the Tarsus Fork-nose is a dog that has been bred primarily for hunting, and it hunts by sight as well as scent. It is, however, particularly good at hunting by scent and indicating the prey as a pointer dog. These dogs have a very acute sense of smell, possibly heightened by their peculiar nose structure. This helps

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Fig. 1. A typical head of Fork-nose dog

Fig. 3. A Fork-nose puppy

them greatly when they are hunting, conferring superior tracking abilities. Their sense of smell is thus, what makes them excellent hunting dogs. They are also very friendly dogs, getting along with humans as well as other dogs (Figure 2).

Tarsus Fork-nose dogs are not very furry. They have shorthaired coats, usually seen in brown and cream that are very easy to maintain. Some of the brown dogs are pied, that is a combination of brown and white. Although they are quite affectionate dogs, Fork-nose dogs are not suited for apartment life and need lots of space move around (Yilmaz, 2007; Yilmaz, 2008) (Figure 3).

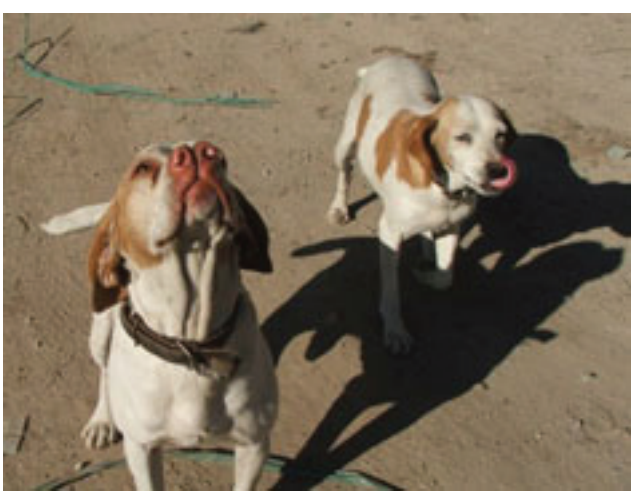

Fig. 2. Two Fork-nose dogs

Apart from the Tarsus Fork-nose, there are several fork-nose dog breeds elsewhere in the world including the Pachon Navarro (Old Spanish Pointer) in Spain and the Andean Tiger Hound in Bolivia (www.thebreedsofdogs.com 2011, en.wikipedia.org 2011).

The Pachon Navarro is a native Braque hunting dog of Spain. They have been known since the 1800s and appear in a number of oil paintings. The Pachon Navarro can be either longhaired or shorthaired. They are described as very friendly, loyal and brave hunters. These dogs, too, are characterized by their ability to point in the direction of the game. This ability naturally makes them great hunting companions. The Navarro also has immense physical strength and can fight other bigger animals, but can be used as pet dogs in the home as well because of their sunny disposition. Navarro dogs are very hard to ignore because of their substantial size: 20-33 kg in weight and, 45 to 60 cm in height average, seen in Table 1.

The Double-nosed Andean Tiger Hound is another of the rare split-nose breeds in the World,

Table 1
Weight and height of Pachon Navarro dogs

Source	Weight, kg			Height, cm		
	General	Male	Female	General	Male	Female
www.thebreedsofdogs.com[1]	27-33			48-57		
en.wikipedia.org[2]	27-33			48-57		
www.sobreperros.com[5]	27-33				55-64	53-60
www.dogbreeds.net[6]	27-33			48-59		
www.pachonnavarro.com[7]		28	25	45-60	55	52
www.continentalkennelclub.com[8]	25-30				51-61	
www.pachon.info[9]	20-30				55	52

and lives in Bolivia. It is believed that the Andean Tiger is descended from the Pachon Navarro, assuming it to have been brought to Bolivia by the Spanish Conquistadors in the 16th century (en. wikipedia.org 2011).

The object of this study was to compare the Tarsus Fork-nose dogs with the Pachon Navarro and Andean Tiger Hound by clarifying body coat colour and some morphologic characteristics of the Tarsus Fork-nose dogs in Turkey.

Materials and Methods

Experimental animals

The Fork-nose dogs in the study were surveyed in January 2011 in the city of Tarsus, in the Province of Icel, in the South of Turkey ($36^0$55'N; $34^0$54'E) (www.googleearth.com). 55 dogs, 24 male and 31 female, were studied. The sampled dogs were aged between 1 and 10 years, and divided into four age groups: 1-2 years, 3-4 years, 5-6 years and 7-10 years. In the first group, there were 4 males and 5 females; in the second group there were 12 males and 9 females; in the third group there were 4 males and 13 females; and in the fourth group there were 4 males and 4 females. Almost all dogs belonged to registered hunters, and the ages of dogs were determined from their ID cards.

Measurements

The sampled dogs were weighed for live weight (LW) with a portable spring scale. Linear measures such as withers height (WH), height at rump (HR), body length (BL), chest depth (CD), and chest width (CW) were measured using a measuring stick calibrated in centimetres. Other linear measures such as heart girth circumference (HGC), cannon circumference (CC), and head length (HL) were measured using a graduated plastic tape (Yılmaz 2007).

Statistical analysis

The data obtained were analyzed with the Minitab 15 statistical software program. Descriptive statistics for body dimensions were analyzed using ANOVA and Student's T-Test that also determined the impact of sex, region, body coat colour, and age group on the response variables of LW, WH, HR, BL, HGC, CD, CW, CC, and HL (Anonymous, 2011).

Results and Discussion

Descriptive statistics for the morphological traits are given in Table 2. Regarding to the effect of sex on phenotypic traits, analyzed t-Test results show that there are significant differences between male and female dogs for LW, HR, BL,

CD (P<0.01) and WH and HGC (P<0.05). For all results significant or not, male dogs yielded higher values than females. When the Tarsus Fork-nose is compared with the Pachon Navarro, it emerges, as seen from Tables 1 and 2, that the Pachon Navarro is about 30% heavier and 10% taller than the Tarsus Fork-nose dogs.

The age means are given in Table 2. In the 1-2 years age group Fork-nose dogs were significantly different from the other age groups for all traits (P<0.05). After the age of 2 years, there were minor differences for live weight and body dimensions. It can be concluded that Tarsus Fork-nose dogs continue growing up to 2 years of age, and then their growth rate slows.

Table 3 shows the coat colour distributions of Fork-nose dogs. In Pachon Navarro Dogs the colour layers are typically: white and orange, black and white, all-over white, brown, and liver, with spots and flecks that alternate on a light background. However, they have a wide variety of colours, from single-coloured and two colours to tricolour (www.thebreedsofdogs.com 2011, en.wikipedia.org 2011, www.pachonnavarro.com 2011, www.pachon.info 2011). Of the Tarsus Fork-nose dogs, nearly 80% are of either or White-

Table 3
Distributions of body coat colour of Tarsus Fork-nose

Trait	White and Brown	White and Black	Brown	Black
n	13	8	29	5
%	23.6	14.6	52.7	9.1

Table 2
Descriptive statistics and comparison results of the phenotypic traits of Tarsus Fork-nose for different sexes and ages

Trait		LW, kg	WH, cm	HR, cm	BL, cm	HGC, cm	CD, cm	CW, cm	CC, cm	HL, cm
		$\bar{X} \pm S_{\bar{X}}$	$\bar{X} \pm S_{\bar{X}}$	$\bar{X} \pm S_{\bar{X}}$	$\bar{X} \pm S_{\bar{X}}$	$\bar{X} \pm S_{\bar{X}}$	$\bar{X} \pm S_{\bar{X}}$	$\bar{X} \pm S_{\bar{X}}$	$\bar{X} \pm S_{\bar{X}}$	$\bar{X} \pm S_{\bar{X}}$
	Overall (n=55)	21.7 ± 0.53	48.5 ± 0.69	48.5 ± 0.65	49.1 ± 0.81	64.0 ± 0.69	20.8 ± 0.48	18.8 ± 0.34	10.5 ± 0.17	20.7 ± 0.30
Sex	Male (n=24)	23.6 ± 0.93a	50.3 ± 1.09b	50.5 ± 1.04a	51.5 ± 1.01a	65.7 ± 0.75a	22.4 ± 0.58a	19.0 ± 0.37a*	10.7 ± 0.23a	20.8 ± 0.50a
	Female (n=31)	20.3 ± 0.49b	46.9 ± 0.79b	46.9 ± 0.73b	47.2 ± 1.09b	62.7 ± 1.03b	19.6 ± 0.64b	18.6 ± 0.53a*	10.4 ± 0.23a	20.5 ± 0.50a
Age	1-2 years (n=9)	12.8 ± 0.31a	41.6 ± 0.99b	42.8 ± 1.14b	42.2 ± 1.74b	59.1 ± 2.38a	17.7 ± 1.18a	16.7 ± 1.18b	8.9 ± 0.29b	17.6 ± 0.63b
	3-4 years (n=21)	17.0 ± 0.63a	49.3 ± 1.10b	49.5 ± 1.09a	50.2 ± 1.17a	64.6 ± 0.86a	21.1 ± 0.65a	18.5 ± 0.42b	10.5 ± 0.18ab	21.4 ± 0.37b
	5-6 years (n=17)	16.5 ± 0.50a	49.5 ± 0.89b	49.1 ± 0.91a	50.4 ± 1.24a	64.5 ± 0.99a	21.0 ± 0.90a	19.4 ± 0.42b	11.1 ± 0.23ab	20.9 ± 0.40b
	7-10 years (n=8)	18.3 ± 1.21a	51.4 ± 1.22a	50.9 ± 1.25a	51.1 ± 1.93a	66.6 ± 1.71a	23.1 ± 0.90a	20.6 ± 0.22a	11.3 ± 0.50a	21.6 ± 0.71a

a, b: P<0.05, c: P<0.01.
* There were no significant differences between means showed in same letters of alphabet in same line and factor group.

Brown and White-Black mixes. Only 20% of the dogs are coloured solid brown or black.

The phenotypic correlation values displayed in the Table 4 show that most of observed traits are affected by selected factors. The highest values was found between WH and HR (r = 0.98) (P<0.01). Other high values were found between LW and WH (r = 0.69), LW and HR (r = 0.68), WH and CD (r = 0.69), HGC and CW (r = 0.69) (P<0.01). The correlations of LW-HL, WH-BL, WH-CC, HR-BL, HR-CD, and BL-CC also yielded higher values those than r = 0.60 (P<0.01). The lowest value (r = 0.28) was found between BL and HL (P<0.05). Other low correlation values were found between WH and AD (r = 0.34), HR and CW (r = 0.33), and CD and CC (r = 0.33) (P<0.05). There were no negative correlations between all other traits, as seen in Table 4.

Conclusions

Yet there has been no literature report revealing the morphological features of the Tarsus Fork-nose dog, so from overall results of the current study, we may conclude that Tarsus Fork-nose Dog is smaller than the Pachon Navarro Dog. Although brown and brown-white coat colours are predominant, Tarsus Fork-nose Dog owners make no selection on body coat colour. The dogs grow up to 2 years of age and that there is only minor growth. This suggests that Tarsus Fork-nose Dog reaches mature body weight and size at around 2 years of age. In order to establish whether they are descended from one ancestor, a full DNA based research can be conducted in the future, and a genetic relationship sought between the Tarsus Fork-nose, Pachon Navarro and the Double-nosed Andean Tiger dogs. With regard to the Tarsus Fork-nose, a larger sample dogs can be used to research of dog behaviour and hunting performance.

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Table 4
Phenotypical correlation coefficients (r) between body measurements in Fork-nose dogs

Traits	LW	WH	HR	BL	HGC	CD	CW	CC
WH	0.69**							
HR	0.68**	0.98**						
BL	0.46**	0.63**	0.63**					
HGC	0.50**	0.48**	0.50**	0.55**				
CD	0.39**	0.69**	0.64**	0.19	0.25			
CW	0.25	0.34*	0.33*	0.49**	0.69**	0.23		
CC	0.58**	0.62**	0.59**	0.60**	0.55**	0.33*	0.35**	
HL	0.62**	0.57**	0.58**	0.28*	0.45**	0.25	0.16	0.49**

*P<0.05, **P<0.01

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