Boarhounds

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Boarhounds are hunting dogs bred for hunting wild boar. The most commonly used for this purpose are hounds, dachshunds or terriers, but pointers, spitz or retrievers can also be used. The dog should be courageous, persistent, passionate, disciplined, sharp and obedient. Hunting in this group of dogs can be carried out individually and for such breeds are used small and collective breeds as well as medium and large breeds of dogs.

boarhound terrier dachshund hound scent (nose) tracking attacking obedience courage sharpness

1. Introduction

Boarhounds are hunting dogs, specifically bred for hunting wild boar. Small boarhounds, such as terriers and dachshunds, are most often used for individual hunting. During individual hunting, the dog's task is to find and surround the boar. On the other hand, large boarhounds, including hounds, are used in group hunting, which has different requirements from the dog. During group hunting, boarhounds are supposed to separate the wild boar from the herd, so that the hunter has a clear shot. There are different physical and psychological traits that boarhounds have to carry to be able to effectively assist in boar hunts. First of all, they should be relatively small in size to ensure speed, maneuverability, and responsiveness to their handler. Aside from physical fitness, boarhounds need to be independent when hunting, which allows them to follow the game at a distance from the hunter. Boarhounds also need to be stubborn, so that the only footprints they are interested in have been left by the wild boar, not other game. There are diverse breeds used as boarhounds, which differ in size, weight, mobility and temperament. The majority of dogs used as boarhounds belong to three FCI groups (Fédération Cynologique Internationale): terriers, dachshunds, and hounds [1]. Figure 1 presents typical representatives of each group.

Figure 1. Typical representatives of boarhounds: (**A**) terrier: Welsh Terrier belongs to group III Section 1 large and medium sized terriers; (**B**) dachshund: Wire-haired Dachshund belongs to group IV dachshunds; (**C**) hounds: Bloodhound belongs to group VI Section 1 scent hounds.

Terriers belong to the III group according to the FCI. This group includes 34 breeds, which are divided into four sections: large and medium-sized terriers (e.g., Wire Fox Terrier, German Hunting Terrier, Welsh Terrier and Border Terrier), small-sized terriers (Jack Russell Terrier, West Highland White Terrier and Scottish Terrier), bull-type terriers (Bull Terrier and American Staffordshire Terrier) and toy terriers (Yorkshire Terrier, English Toy Terrier and Australian Silky Terrier) (FCI breeds nomenclature). Most terriers come from Great Britain and are characterized by a hard coat, except for bull-type terriers [2]. They are characterized by strong temperament, courage, hunting passion, and self-confidence [3]. Terriers require a consistent handler who can handle their hard temper. They are mainly used as hunting dogs, guard dogs, and companion dogs [1].

Dachshunds belong to the IV group according to the FCI, which includes nine varieties. There are three types of dachshund: standard dachshund, miniature dachshund, and rabbit dachshund. Each type is further divided based on hair type into: smooth-haired, long-haired and wire-haired [1]. Dachshunds have a distinctive body structure, elongated body, and short legs. Dachshunds are characterized by independence, stubbornness, and problems with subordination. They are used as hunting dogs and companion dogs [2].

Hounds are dogs belonging to the VI group, which includes scent hounds and related breeds. Group VI is divided into three sections. The 1st section includes large-sized hounds (Bloodhound and Grand Griffon Vendéen), medium-sized hounds (Finnish Hound, Polish Hunting Dog and Slovak Kopov) and small-sized hounds (Basset

Hound, Beagle and German Hound). The 2nd section includes Alpine Dachsbracke, Bavarian Mountain Scent Hound, and Hanoverian Scent Hounds. The 3rd section includes related dogs, such as Dalmatian and Rhodesian Ridgeback (FCI breeds nomenclature). Hounds are very diverse in size, which means that they are used for hunting game of various sizes. All hounds have good downwind, chasing instincts, and persistence [2].

2. Dog Breeds and General Results

The complete dataset included 1867 individuals belonging to 39 dog breeds. Figure 2 presents the breed distribution analyzed in this study. The most numerous breeds were Polish Hunting Dog (662 individuals), German Hunting Terrier (269 individuals), Slovak Kopov (238 individuals) and Wire-haired Dachshund (220 individuals). All boarhound breeds analyzed in this study have been grouped into three breed groups, i.e., (1) hounds (*n* = 1109), (2) terriers (*n* = 373), and (3) dachshunds (*n* = 233). All animals (*n* = 1867) were included in variance analysis, in which sex and age were factors influencing the results of the hunt trials. Data reduction was applied for variance analysis in which breed or breed group were factors. Breeds represented by a small number of individuals (<50), e.g., English Springer Spaniel, Hanoverian Scent Hound, or German Short-haired Pointing Dog, were excluded from the analysis of the influence of the breed (*n* = 1661) on the hunt trials. In the breed group, there were 152 dogs removed from the database (*n* = 1715). The reason for data reduction in this case was to sort out breeds that were classified as flushing dog, pointing dog, spitz and primitive types.

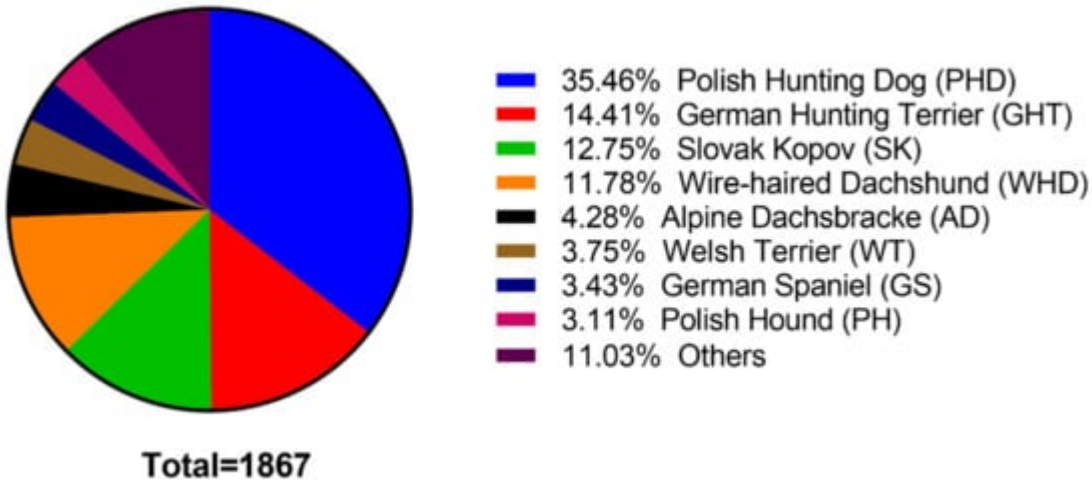

Figure 2. Breed distribution of the boarhound population.

The Table 1 present results of the hunt trials for boarhounds. In hunt trials for boarhounds, dogs achieved scores from 0 to 180 points. The mean score was 116.74. The boarhounds obtained the highest results in obedience (3.69), scent (nose) (3.54), and searching (3.47), while the lowest results were scored in announcing/barking (0.24), and tracking on the lead (2.76).

Table 1. Descriptive statistics of the results of the hunt trials for boarhounds.

Traits	Mean	SD	Min.	Max.	Sex	Age	Breed Group	Breed
Total score	116.74	27.08	0	180	**	**	**	**
Scent (Nose)	3.54	0.84	0	4	**	*	ns	**
Searching	3.47	0.86	0	4	**	**	*	**
Courage and sharpness	3.15	1.02	0	4	**	**	**	**
Voice on trail	3.37	0.95	0	4	**	**	ns	**
Voice when game in sight	3.28	1.03	0	4	**	**	*	**
Correctness of the attack	3.25	1.02	0	4	**	**	ns	**
Persistence	3.09	1.08	0	4	**	**	**	**
Obedience	3.69	0.61	0	4	ns	**	ns	*
Tracking on the lead	2.76	1.15	0	4	ns	**	*	ns
Announcing/barking	0.24	0.83	0	4	ns	*	**	**

*Significance thresholds: * $p < 0.05$; ** $p < 0.01$; ns $p > 0.05$.*

3. Sex Effect

Table 2 presents the effects of sex on the results of the hunt trials in boarhounds. A total of 1104 dogs and 763 bitches were evaluated altogether. Dogs scored numerically higher than bitches in every competition. Dogs also scored numerically higher than the average for the entire study population (significance was not tested). Highly significant differences between sexes occurred in the total score and the competitions: scent (nose), searching, courage and sharpness, voice on trail, voice when game in sight, correctness of attack, and persistence ($p < 0.01$). No statistical significance was found in obedience, tracking on the lead, and announcing/barking ($p > 0.05$).

Table 2. The impact of sex and age on the results of the hunt trials for boarhounds.

Traits	Mean	Sex		*p*	Age						*p*
		Bitch	Dog		I	II	III	IV	V	VI	
N	1867	763	1104		146	615	440	269	165	232	
N Bitch/Dog					68/78	286/329	172/268	95/174	58/107	84/148	
Total score	116.74	112.98 ^{A}	119.35 ^{B}	**	107.44 ^{CDEF}	113.73 ^{CEF}	117.25 ^{ABF}	117.86	121.99	124.51	**
Scent (Nose)	3.54	3.45 ^{A}	3.61 ^{B}	**	3.36 ^{F}	3.53	3.54	3.57	3.53	3.67 ^{A}	*

Traits	Mean	Sex		*p*	Age						*p*
		Bitch	Dog		I	II	III	IV	V	VI	
Searching	3.47	3.37 ^{A}	3.54 ^{B}	**	3.30	3.40 ^{F}	3.49	3.51	3.49	3.62 ^{B}	**
Courage and sharpness	3.15	3.01 ^{A}	3.24 ^{B}	**	2.88 ^{EF}	3.06 ^{F}	3.17	3.15	3.30 ^{A}	3.63 ^{AB}	**
Voice on trail	3.37	3.26 ^{A}	3.45 ^{B}	**	3.11 ^{CDEF}	3.28 ^{EF}	3.35 ^{AF}	3.45 ^{A}	3.52 ^{AB}	3.62 ^{ABC}	**
Voice when game in sight	3.28	3.17 ^{A}	3.36 ^{B}	**	3.01 ^{DEF}	3.19 ^{F}	3.24 ^{F}	3.35 ^{A}	3.42 ^{A}	3.58 ^{ABC}	**
Correctness of the attack	3.25	3.12 ^{A}	3.33 ^{B}	**	2.93 ^{CEF}	3.16 ^{EF}	3.29 ^{A}	3.25	3.40 ^{AB}	3.47 ^{AB}	**
Persistence	3.09	2.93 ^{A}	3.19 ^{B}	**	2.74 ^{CDEF}	2.97 ^{EF}	3.08 ^{AEF}	3.08 ^{AEF}	3.36 ^{ABCD}	3.43 ^{ABCD}	**
Obedience	3.69	3.67	3.70	ns	3.49 ^{BCDF}	3.68 ^{A}	3.71 ^{A}	3.74 ^{A}	3.66	3.73 ^{A}	**
Tracking on the lead	2.76	2.69	2.81	ns	2.56 ^{EF}	2.65 ^{EF}	2.79	2.74	2.97 ^{AB}	3.00 ^{AB}	**
Announcing/barking	0.24	0.20	0.26	ns	0.14	0.16 ^{E}	0.25	0.23	0.46 ^{B}	0.32	**

scripts of

—group

4. Age Effect

All dogs, i.e., 1867 animals, were used to analyze the influence of age, and the results are presented in Table 3. The dogs were divided into six age groups. The most numerous group were dogs from group II (615 individuals), and the least numerous group was group I (146 individuals). There was a constant increase in the scores received for each competition with age. Scores equal to or above the average occurred in group III and older in the total score and in the following competitions: scent (nose) ($p < 0.05$), searching, courage and sharpness, correctness of attack, obedience, tracking on the lead and announcing/barking ($p < 0.01$). In all categories, the older dogs achieved higher results than the younger ones, especially in the obedience, voice and persistence competitions ($p < 0.01$). The smallest differences occurred in the scent (nose) and announcing/barking competition and involved the youngest (groups 1 and 2) and the oldest dogs (group 6) ($p < 0.01$).

5. Breed Group Effect

Table 3 presents the effects of breed group on the results of the hunt trials in boarhounds. The cohort size for the breed group (n = 1715) included only typical boarhounds (i.e., hounds, terriers, and dachshunds), which were predominant groups in the dataset. The remaining groups belonged to pointing dogs, flushing dogs, and spitz and primitive types, which were numerically underrepresented and therefore omitted from this analysis. There were three main groups in boarhound hunt trials: hounds (1109 individuals), terriers (373 individuals), and dachshunds (233 individuals). The most numerous groups were hounds, the leading representative of which was the Polish Hunting Dog, and the least numerous were the dachshunds with the Wire-haired Dachshund as the typical

representative. The mean of the total score among the three breed groups was 117.40, and it was the highest mean among all the scores analyzed. The boarhounds classified into three breed groups (based on FCI classification) obtained the highest results for obedience (3.69) and scent (nose) (3.55), and the lowest for announcing/barking (0.24). The best total score was achieved by the dachshund dogs (119.96), and the lowest by the terriers (114.26) ($p < 0.01$). Dachshunds scored numerically higher than or equal to almost all competitions except scent (nose), obedience and announcing/barking. There were no differences between the breed groups in scent (nose), voice on trail, correctness of attack and obedience ($p > 0.05$).

Table 3. The impact of breed groups on the results of the hunt trials for boarhounds.

Traits	Mean	Breed Groups According to FCI			*p*
		Hounds	Dachshunds	Terriers	
N	1715	1111	231	373	
N_{Bitch}		457	90	155	
N_{Dog}		654	141	218	
Total score	117.40	117.92 ^{C}	119.96 ^{C}	114.26 ^{AB}	**
Scent (Nose)	3.55	3.57	3.54	3.50	ns
Searching	3.48	3.50	3.54	3.37	*
Courage and sharpness	3.17	3.13 ^{B}	3.34 ^{A}	3.18	**
Voice on trail	3.39	3.40	3.49	3.30	ns
Voice when game in sight	3.31	3.31	3.46 ^{C}	3.21 ^{B}	*
Correctness of the attack	3.26	3.26	3.39	3.21	ns
Persistence	3.11	3.07 ^{B}	3.31 ^{A}	3.10	**
Obedience	3.69	3.72	3.67	3.62	ns
Tracking on the lead	2.78	2.82 ^{C}	2.82	2.64 ^{A}	*
Announcing/barking	0.24	0.34 ^{BC}	0.11 ^{A}	0.05 ^{A}	**

*Significance thresholds: * p < 0.05: ** p < 0.01: ns p > 0.05: Numbers in superscripts of the mean result in breed groups indicate the differences to the other breed groups (A—Hounds, B—Terriers, C—Dachshunds).*

6. Breed Effect

Table 4 presents the effects of breed on the results of the hunt trials in boarhounds. The effect of breed was analyzed in eight breeds (1661 individuals), with a total of more than 50 individuals. The most numerous breed was

Polish Hunting Dog (662 individuals), and the least numerous was Polish Hound (58 individuals). The mean for the total score among the analyzed breeds was 117.27 points. Boarhounds achieved the highest results in the obedience competition (3.71) and the lowest in the announcing/barking competition (0.24). Highly significant differences were found in the overall score between breeds ($p < 0.01$). The Welsh Terrier and Polish Hound differed from the Alpine Dachsbracke, Polish Hunting Dog, Wire-haired Dachshund, German Hunting Terrier and Slovak Kopov. No differences between breeds occurred in the tracking on the lead competition ($p > 0.05$). The smallest differences were in the obedience and search competition. By contrast, the greatest differences between breeds were in the courage and sharpness competition. The Polish Hound achieved the lowest score among all the competitions. The Alpine Dachsbracke scored numerically the highest in most of the competitions, except persistence, obedience, and announcing/barking.

Table 4. The impact of breed on the results of the hunt trials for boarhounds.

Traits	Mean	Breeds								*p*
		1. PHD	2. GHT	3. SK	4. WHD	5. AD	6. WT	7. GS	8. PH	
N	1661	662	269	238	220	80	70	64	58	
N_{Bitch}	672	269	115	94	84	32	27	23	28	
N_{Dog}	989	393	154	144	136	48	43	41	30	
Total score	117.27	117.61 FH	117.143 FH	120.06 FGH	120.03 FH	125.26 FGH	108.77 ABCDE	106.01 CE	104.12 ABCDE	**
Scent (Nose)	3.55	3.56 H	3.55 H	3.63 H	3.55 H	3.75 H	4.49	3.30	3.10 ABCDE	**
Searching	3.47	3.50 H	3.39	3.56 H	3.54 H	3.64 H	3.45	3.14	3.03 ACDE	**
Courage and sharpness	3.17	3.11 BDE	3.32 AFGH	3.23	3.40 AFGH	3.46 AFGH	2.83	2.75 BDE	2.73 BCDE	**
Voice on trail	3.39	3.37 CE	3.39 GH	3.53 AGH	3.50 GH	3.68 AFGH	3.21 E	3.03 BCDE	2.96 BCDE	**
Voice when game in sight	3.29	3.26 E	3.26 FG	3.39 FGH	3.46 AGH	3.61 AFGH	2.99 BCDE	2.85 BCDE	2.94 CDE	**
Correctness of the attack	3.26	3.24	3.34 FH	3.35 FH	3.39 FH	3.42 FH	2.86 BCDE	2.84	2.94 BCDE	**
Persistence	3.09	2.99 BCD	3.18 AGH	3.27 AGH	3.31 AGH	3.30 GH	2.95	2.50 BCDE	2.70 BCDE	**
Obedience	3.71	3.76	3.61	3.70	3.68	3.80	3.61	3.83	3.52	*

Traits	Mean	Breeds								*p*
		1. PHD	2. GHT	3. SK	4. WHD	5. AD	6. WT	7. GS	8. PH	
Tracking on the lead	2.79	2.82	2.72	2.81	2.83	3.04	2.47	2.63	2.67	ns
Announcing/barking	0.24	0.41 BCDF	0.06 A	0.19 A	0.11 A	0.31	0.00 A	0.25	0.07	**

Significance thresholds: * $p < 0.05$: ** $p < 0.01$: ns $p > 0.05$: Numbers in superscript of the mean results in the breed indicate the difference to other breeds (A—PHD Polish Hunting Dog, B—GHT German Hunting Terrier, C—SK Slovak Kopov, D—WHD Wire-haired Dachshund, E—AD Alpine Dachsbracke, F—WT Welsh Terrier, G—GS German Spaniel, H—PH Polish Hound).

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