

ETHOLOGICAL AND PSYCHOLOGICAL MAN - DOG INTERACTIONS

**ANTON HVOZDÍK, GABRIELA MARCHEVSKÁ*,
MILOSLAV ONDRAŠOVIČ, OLGA ONDRAŠOVIČOVÁ,
MILADA VARGOVÁ AND JANA KOTTFEROVÁ**

University of Veterinary Medicine,
041 81 Košice, Slovakia
*Resocialisation Centre for Drug Addicts,
040 01 Košice, Slovakia
e-mail: kottfer@uvm.sk

Received for publication January 28, 2002.

The study dealt with ethological and psychological man-dog interactions. An effort was made to seek the correlation between physiological characteristics of men and ethological profile of dogs. The experiment included 88 people of both sexes and 88 dogs of German shepherd, Doberman, Cocker spaniel, and Boxer breeds. Significant differences were observed in independent variables – inclusion of the man in groups (FPQ), sex of the owner and sex of the dog. The differences recorded concerned the following traits: “excitability” – $F(2.76) = 3.31$, $P < 0.0417$; “emotional lability” – $F(2.76) = 3.61$, $P < 0.0319$; “dominance” – $F(2.76) = 5.25$, $P < 0.0139$, and “placidity” – $F(2.76) = 3.68$, $P < 0.0298$. Significant differences were recorded between groups one and two: the owners of German shepherds and Dobermans showed the highest score at the first pole of the evaluation system in comparison with the owners of cocker spaniels. Similar statistically significant differences were recorded between groups two and three: comparison of owners of cocker spaniels with the owners of boxers showed higher score also at the first pole. Our results allow us to draw attention to a wide spectrum of psychosocial and ethological aspects of relations between men and dogs. This should be respected from the civilisation, veterinary, psychological and ethical points of view.

Key words: man, dog, ethology, psychosocial relations.

The development of psychosocial man-dog interactions reaches far back to the history and is a subject of interest also at the present time. With regard to the history we refer to the domestication process which has started more than 10 000 years ago (10). The character of this process was unambiguously affected by pragmatism on the side of the man. With regard to the presence we can speak about civilisation character of these social mechanisms that were conditional upon the development of scientific branches dealing with animal behaviour. This period has started in the thirties and lasts up to this day (6).

The studies of exact man-dog relationships were preceded by long lasting ethological research of the *Canis* species with all its behavioural characteristics. Considerable body of knowledge in this particular area was supplied by American scientists (5, 15, 16).

The dog as an animal species with developed social organisation is exposed to a risk resulting from environmental frustration factors. They are presented as a wide range of negative breeding influences which, after exceeding the frustration tolerance of dogs, reduce in principle their welfare (12). The behavioural variability of this animal species is in direct proportion to genetic modifications of breeding which, of all domesticated animals, is the highest in this respective species. From this point of view the study of normal and abnormal behaviour of dogs belongs among the key ethological problems (7, 17).

Material and Methods

The entire experimental study included 88 people, the dog owners, who owned one of the species mentioned above. The breeds studied were divided to three categories according to the ascribed behavioural properties. The assigning of dogs to individual categories complied with the concept of American ethologists (1, 4) from the point of view of their reactivity, aggressivity and learning. On the basis of this, the behavioural profile of the selected dog breeds was as follows: Ist category - very low reactivity, very high aggressivity, very high degree of learning (German shepherd, Doberman); IInd category: high reactivity, medium aggressivity, low degree of learning (Cockerspaniel); IIIrd category: low reactivity, high aggressivity, low degree of learning (Boxer). According to the authors mentioned the aggressivity is an inherent and acquired destructive activity of animals oriented on the inducing stimuli. The authors described the reactivity as biological, genetic and disposition features of the animal. They defined learning as repeated activity of the animal by which it satisfies its primary and secondary needs. It includes perception-cognitive intelligence through which, on the basis of previous experiences, the animal is able to resolve by its particular behaviour the arising problematic situation as fast as possible.

The owners were also assigned to 3 groups. The first group consisted of 41 owners of German shepherds and Dobermans (27 men and 14 women). The second group comprised 22 owners of Cockerspaniels (among them 9 women). The third group consisted of 25 owners of boxers (10 men and 15 women).

On the basis of assigning the dog owners to these three groups we were looking for some relationships and trying to detect some correlation between personal characteristics of the owners and ethological properties of the dog breeds selected by them.

The personal characteristics of the owners were summarised according to the Freiburg personal questionnaire – FPQ (9) (Supplement I). It can be characterised as a multidimensional test of personality, suitable for diagnostics of important personal features. It can diagnose 12 personal dimensions.

During our study the respondents of this questionnaire (FPQ) were given also its supplement. One condition for inclusion in the investigation was the age of the owner, minimum 15 years, which corresponds to the type of this questionnaire. The second condition was that the owners were able to select freely the breed of their dog.

The maximum allowed age of dog owners for this study was 60 years. Our study was in fact *ex post facto* research and it was realised by visiting the dog training facilities where the above mentioned owners, selected according to dog breeds, were given the FPQ and its supplement. The data were gathered from the end of February till

half of April 2001, also by target correspondence with dog owners the addresses of which were obtained from the Kynological Club.

The relationship between personal characteristics of the owner and behavioural profile of the dog was evaluated by the statistical analysis of variance (2). We used three independent variables. The inclusion in the group of owners (1 – 3), sex of the owner (male-female) and sex of the dog (dog-bitch). The values of FPQ, i.e. 12 personal dimensions, were our dependent variable. The analysis of variance always included one of the 12 FPQ dimensions, either as a brutto score (BS) or as a standard score in the form of staninas.

Using the method mentioned above the personality of the man is described as “an individuum looked upon as an integration toward realisation in interaction with its environment” (14). Eibl-Eibesfeldt (3), an important representative of ethology, the science branch involved in studies of animal and human behaviour in both the natural and experimental environment, uses the following interpretation in relation to human personality. Inherent programmes of man’s adaptation or pre-programming express the fact that even behaviour of man in certain areas depends on phylogenetic factors. They determine that the man behaves under certain conditions under the influence of inherent behavioural mechanisms. In other words, besides individually acquired characteristics, species-conditional form of adaptation is also applied in the psychics of the man.

Results

Significant statistical differences were observed in the interaction of the following variables: inclusion in the group of owners, their sex and sex of their dogs even when the values of brutto score (BS) were converted to a standard score (staninas).

The differences recorded concerned traits:

$F(2,76) = 3.31$; $P < 0.0417$ excitability; $F(2,76) = 3.61$; $P < 0.0319$ emotional lability; $F(2,76) = 5.25$; $P < 0.0073$ dominance; $F(2,76) = 3.68$; $P < 0.0298$ calmness, placidity.

Fig. 1 illustrates interaction of all three independent variables that exhibited significant differences. This refers to the trait “excitability” which ranges from “slightly frustrated” at one pole to “calm” at the other one (Supplement 1). In our sample, “excitability” dominated the most in female owners of German shepherd, Doberman and boxer dogs. Low score for “excitability” was observed in female owners of cocker spaniel dogs and boxer bitches. The lowest score was recorded for owners of boxer breed. These individuals, observed in our study, were shifted significantly to the pole “calm”. According to FPQ “excitability” is independent on age and sex.

Fig. 2 shows interactions of all three independent variables. We can observe also in this case significant differences related to “emotional lability”. This characteristics ranges from “emotionally labile” at one pole to “emotionally stable” at the other one (Supplement 1). According to our data, the highest score with regard to “emotional lability” was observed with female owners keeping dogs of breeds German shepherd, Doberman and boxer. Low score was observed with females who owned cocker spaniel dogs and boxer bitches. In our set of owners the latter group exhibits the highest “emotional stability”. According to FPQ “emotional lability” is independent on age and sex.

SUPPLEMENT 1

Freiburg personal questionnaire

Form A,B,C

Evaluation list

Name and family name:		Age:	Education:
Residence:		Marital status:	Date:
Scale	Percentage Standard score	4 7 12 17 20 17 12 7 4 9 8 7 6 5 4 3 2 1	Staninas
FPQ 1	NERVOUSNESS psychosomatically disturbed		psychosomatically undisturbed
FPQ 2	AGGRESSIVITY spontaneously aggressive emotionally immature		non-aggressive self-controlled
FPQ 3	DEPRESSION ill-humoured unsure		contented self-confident
FPQ 4	EXCITABILITY excitable easily frustrated		calm
FPQ 5	SOCIABILITY sociable lively		unsociable reserved
FPQ 6	PLACIDITY, COMPOSURE self-confidence good mood		excitable hesitant
FPQ 7	DOMINANCE reactively aggressive assertive		submissive subdued
FPQ 8	RESERVE reserved tense		spontaneous sociable
FPQ 9	OPENENESS open self-critical		distant uncritical
FPQ E	EXTROVERSION extrovert		introvert
FPQ N	EMOTIONAL LABILITY emotionally labile		emotionally stable
FPQ M	MASCULINITY typical male self-description		typical female self-description

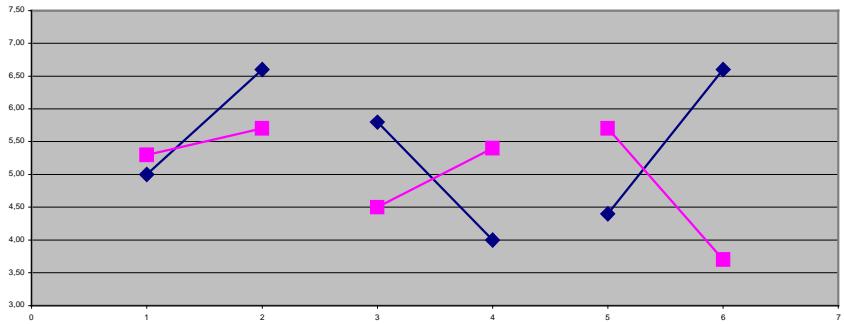


Fig. 1. Excitability.
 $F(2,76) = 3.31$ $P < 0.0417$

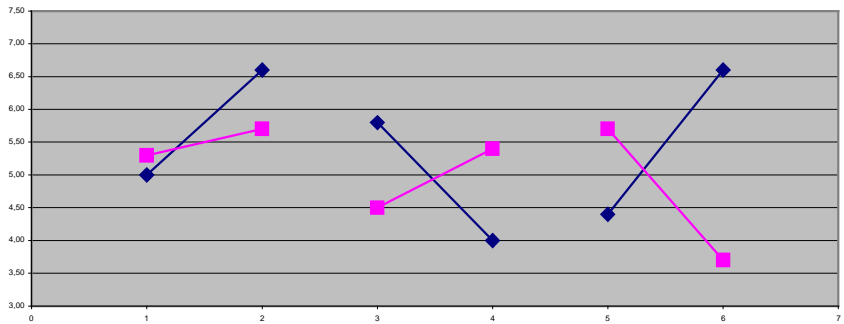


Fig. 2. Lability.
 $F(2,76) = 3.61$ $P < 0.0319$

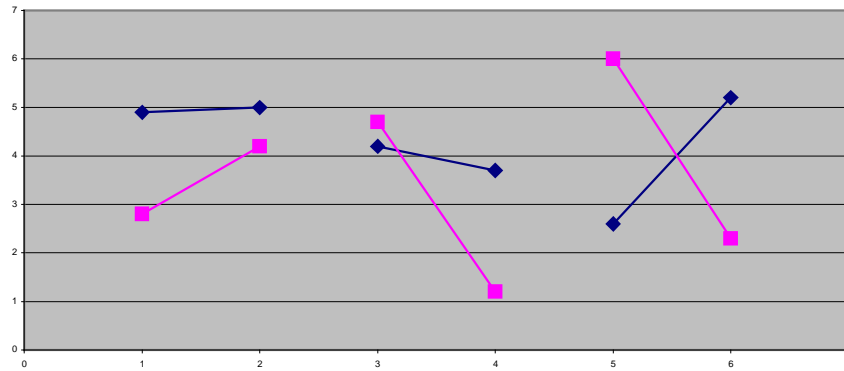


Fig. 3. Dominance.
 $F(2,76) = 5.25$ $P < 0.0073$

sex	M	F	M	F	M	F
group	1		2		3	

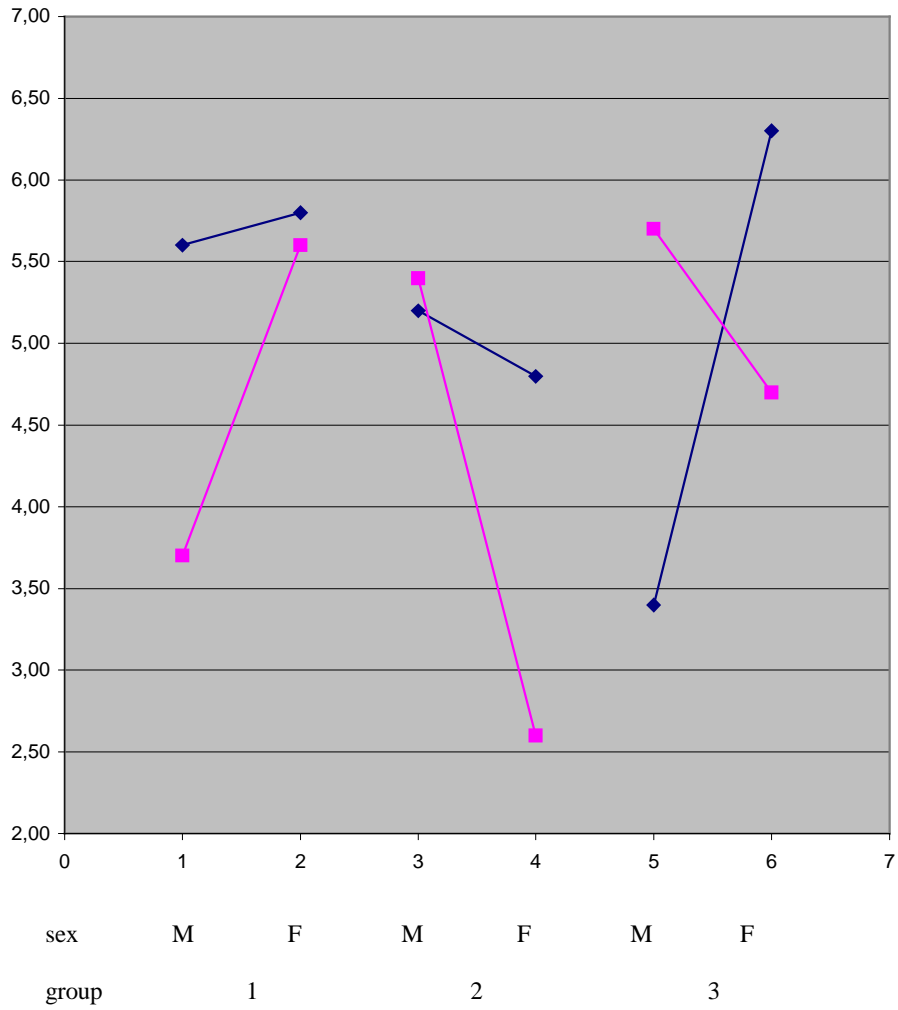


Fig. 4. Dominance.
 $F(2,76) = 3.07$ $P < 0.0294$

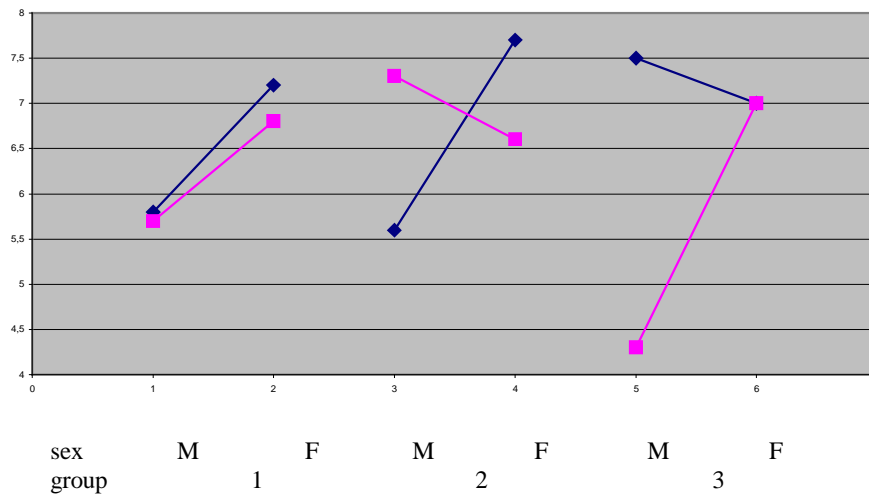


Fig. 5. Calmness, placidity.
 $F(2.76) = 3.68$ $P < 0.0298$

Explanation to Figs 1-5:

M - Male (Man)
 F - Female (Women)
 D - Dog ♂
 B - Bitch ♀

Figs 3 and 4 show the results obtained for “dominance” which ranges from “reactively aggressive” at one pole to “submissive, placid” at the other one (Supplement 1). The lowest score was observed with female owners who selected cocker spaniel bitches. This group had the lowest score at the pole “submissive, placid”. High values of BS were reached by men who owned boxer bitches (Fig. 3). However, after recalculation to staninas, the highest score was reached in the group of women who owned boxer dogs (Fig. 4). According to FPQ, the “dominance” characteristics depends on sex.

Fig. 5 illustrates “placidity, calmness”. It is characterised as “self-confidence, good mood” at one pole and “irritable, hesitant” at the other (Supplement 1). The highest score was obtained with female owners who had cocker spaniel dogs and with male owners who owned boxer dogs. The owners mentioned showed the lowest score at the pole “self-confidence, good mood” while male owners of boxer bitches exhibited the lowest score at the opposite pole. According to FPQ, the characteristics “calmness, placidity” is dependent on sex and independent on age. In addition to that, significant differences were observed in interaction of two independent variables, i.e. inclusion of owners in the groups and sex of the owners.

Table 1
Behavioural characteristic in dogs

ITEM	Group – CS					
	1	2	3	SD	F	P
AGGRESSIVITY	6.28	4.39	6.44	± 0.02	3.81	0.019
SOCIABILITY	9.19	9.82	7.54	± 0.035	3.49	0.03
RESERVE	3.73	3.04	4.80	± 0.038	3.40	0.03

Explanation:

CS — Crude score

1 — Owners of German shepherds or Dobermans

2 — Owners of Cocker spaniels

3 — Owners of Boxers

SD — Standard deviation

F - Trait

P – Level of statistical significant

Table 1: the characteristics “aggressivity” ranges from “spontaneously aggressive, emotionally immature” at one pole to “non-aggressive, self-controlled” at the other one (Supplement 1). Significant differences were observed between the groups one and two: owners of German shepherds and Dobermans show the highest score at the first pole in comparison with owners of cocker spaniels. According to FPQ “aggressivity” does not depend on the sex of the respondents, however it depends on their age. The feature “companionability” ranges from “companionable, lively” at one pole to “uncompanionable, reserved” at the other (Supplement 1). Significant differences were recorded between the second and third group of owners. According to the FPQ the characteristics “companionability” is independent on sex and age of owners. The owners of cocker spaniels showed higher score at the first pole than those who owned boxers. The characteristics “reserve” can range from “reserved, tense” to “spontaneous, sociable”. The owners of boxer breed reached high score at the pole “reserved, tense”. The owners of cocker spaniels rated the lowest with regard to “reserve”.

Discussion

The topic, selection and realisation of the present study (collection of data and their statistical processing) proved that the problem is very complex. The overlapping of psychological and ethological aspects as relationships between human and subhuman world also pointed to both, specificity and complexity of this study.

The originality of the topic and insufficient information about the problem point to its high demands of interdisciplinary character. In solving the set task we had to face to *de novo* situation. On the other hand, the lifestyle of the modern man inducing besides other changes also expansion of dog keeping necessitates penetration of science into the relationships studied. This allows the man to produce an objective picture of both his own psychosocial status and ethical credit.

More experience in this area was gained particularly by American scientists as the behavioural sciences in their part of the world have a long-term tradition. One of the important personalities in this direction is (19, 20, 21) who, as a psychologist and ethologist, has coordinated most of the related research in his country.

The analysis of our results allowed us to point to some facts. With the characteristics specified as “excitability” we registered low score with the owners of cocker spaniel breed. Its ethological disposition in the form of high reactivity is interesting particularly in relation to the low score of female owners of boxer breed. This breed has behavioural dispositions pointing to low reactivity. This indicates that choleric select choleric dogs or, on the contrary lethargic dogs.

These observations point to pronounced interactions between men and dogs in their conflicts owners–dogs, particularly at initial social adaptation. Within the scope of this adaptation the basis of owner-animal hierarchy are laid and the man should play a dominant role in this process.

The owner – choleric - with expressive manifestations may induce unwanted tension in the dog of analogical disposition resulting in conflictogenic behaviour of the dog (phobia – dominance) and the subsequent aggressivity oriented either at the owner, or, through the mechanism of negative emotional transfer, to other members of owner’s family or to additional live subject (8).

In this context interesting results were obtained in our study with men, when with regard to “excitability” we observed significant relationship at the pole “calm” in case of boxers the excitability of which is low. This knowledge can support the hypothesis of disposition dependence of the man-dog relationship.

Emotional aspects as properties of human personality are of primary ethological importance in the interspecies relationships. Dogs are highly sensitive to the behaviour of man. Low score for “emotional stability” with female owners of boxer bitches indicates possible importance of different emotionality of dogs within one breed. It is also necessary to take into account the reproductive cycle at both the human and subhuman level. Bitches have two cycles in one month during which the emotional coefficient rises to extremes.

The latter aspect was not investigated in our study but it can become a stimulus to future studies. This is to say that by taking into consideration the oestrus of bitches the “diagnostics” of the owner’s personality could increase considerably, as he/she is subjected to extreme load. Generally, emotionality plays an important role in human psychics (performance, stage fright, motivation, and similar), the more intensive is the experience of an individual, the more it affects his thinking, motivation and his way of life (13). In case of the relationship man-dog this link is strengthened by extrapunitive behaviour of animals, i.e. absence of behavioural autoregulation.

With regard to “dominance” we considered interesting that high score was observed with men who owned boxer bitches. The boxer breed is highly aggressive. By taking into account the ethological definition of aggressivity with its higher inherent potential in men (in women it is more or less acquired) the risk of aggressive encounters between men and dogs arises. This may result in dramatic situations (11,

17) in which the assertivity of a man through his dog represents a signal of negative personal compensation of such an owner.

Statistical evaluation of intergroup interactions showed the highest arithmetic difference between groups 2 and 3 with regard to "sociability" despite the fact that it concerned global evaluation of men and women. These data make us to ponder about the altruistic behaviour of the man and synanthrophism. It seems that with regard to the present civilisation these phenomena have no constant character.

The results obtained in our study signalised in many cases that the selected theme was topical and the space for additional research and reserves with regard to its realisation still exist in this area. It seems that FPQ does not adequately describes human personality for the respective intentions. Motivation appears to be the most lacking item in similar studies. With regard to this the diversity of dogs and dog breeds in relation to man may be an interesting variable in the analysis of human personality. More intensive studies of correlation of the sex of dog owners and their dogs may suggest some psychological or psychiatric suspect states in the man. The results obtained in this study are only initial in this respect. The problems related to sociopathies occurring at the interspecies level, particularly from the point of view of sex, acquire some specificity in tabuisation of these deviations, e.g. sodomy or sado-masochism (18).

The age range of the owners investigated in our study was rather wide (15 to 60 years). Higher number of respondents and dog breeds in future studies could contribute to qualitatively more professional conclusions in this area.

References

1. Cambell W.A.: Behavior Problems in Dogs. American Veterinary Publications, California Inc., 1985, p. 306.
2. Clauss G., Ebner H.: Basis of statistics (In Slovak), Publ. house, Bratislava, 1988, p. 255.
3. Eibl-Eibesfeldt I.: Human ethology.: In: HEYMER, A.: Ethologisches Wörterbuch. Verlag Paul Parey, Hamburg, 1997, p.167.
4. Hart L.B., Hart L.A.: Canine and Feline Behavioral Therapy. Lea & Febiger, Philadelphia, 1985, p. 274.
5. Holliday T.A., Schubert T.A., Hart B.L.: Castration of adult male dogs: Effects on roaming, aggression, urine marking and mounting. J. Am. Vet. Assoc., 1976, **4**, 168-170.
6. Hvozdič A.: Model of interaction "Man-animal" (In Slovak). Veterinárny spravodajca, 1988, **10**, 3-4.
7. Hvozdič A.: Abnormal behavior of the dogs. Anim. Beh., 1993, **10**, 3-4.
8. Hunsberger J.: Communication of dominance status in established relationships. Anim. Beh., 1991, **3**, 2-4.
9. Kollárik T., Poliaková E., Ritomský A.: Freiburg personal questionnaire. Psycho-diagnostic and didactic tests (In Slovak), Bratislava, 1984, p. 168.
10. Kolb E.: Vom Leben und Verhalten unserer Haustiere. Hirzel Verlag, Leipzig, 1981, p. 244.

11. Lauridson J., Meyers L.: Evaluation of a fatal do bite: views of a medical examiner and a behaviorist. *Forensis Animal Behavior Session, Wilmington (USA)*, 1991, **4**, 120-123.
12. Ondrašovič M., Ondrašovičová O., Vargová M., Sokol J.: *Animal Hygiene*, UVL Košice, 1994, p. 209.
13. Pardel T.: *Motivation of human activities and behaviour (In Slovak)*. Publ. House, Bratislava, 1977, p. 98.
14. Řičan P.: *Psychological personalities (In Czech)*. Orbis, Praha, 1982, p. 165.
15. Scott J. P., Fuller J.L.: *Genetics and Social Behavior of the Dogs*. University of Chicago, 1965, p. 230.
16. Tuber D., Hothersal D., Voith V.L.: *Animal Clinical Psychology, A Modest Proposal Americ. Psychol.*, 1974, **29**, 762-768.
17. Voith V.L.: *Collecting evidence and behavioral assesment of serious dog attacks on humans. Forensis Animal Behavior Session, Wilmington (USA)*, 1991, **4**, 73-75.
18. Weidner E.: *Sodomie und Sadismus als Tierschutzproblem. Inaugural-Dissertation zur Erlangung des Doktorgrades. Liebig-Universität zu Giessen*, 1982, p. 83.
19. Wright J.C.: *Severe attacks by dogs: Characteristics of the dogs victims, and the attack seettings. Public Health Reports*, 1985, **1**, 55– 61.
20. Wright J.C., Nesselrote M.S.: *Classification of behavior problems in dogs: Distribution of age breed, sex and reproductive status. Anim. Behav. Sci.*, 1987, **19**, 169–178.
21. Wright J.C.: *An Analysis of Pet and Victim Variables Associated with Cat and Dogs Bites. The Sauntheastern Psychological Association meeting, New Orleans*, 1988, pp. 1–2.

