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Primitive and Aboriginal Dog Society

Dear Members of the Preservation of the Primitive Aboriginal Dog Society and readers of our Newsletter!

In this issue we publish three articles presented at the first international conference "Aboriginal Breeds of Dogs as Elements of Biodiversity and Cultural Heritage of Humankind".

Article by Konstantin and Anna Plakhovs about new standard of the Tazy caused polemic discussions at the conference.

Article by M Oskarsson and P. Savolainen is a summary, updating their recent worldwide research on mt-DNA of dogs.

Article by E. Eliason is dedicated to coyote sighthounds. Development of this breed on North American continent is particularly interesting, because entire process of formation of this breed present, an opportunity to observe how selective breeding to hunt a specific quarry, which is coyote, works. These dogs go only after coyote and no one other sighthound breed satisfies these hunters. We can suppose that this is a beginning of formation of a new aboriginal breed based on interbreeding of several well known sighthound breeds with constant, although not well organized, testing them at coyote hunting.

Sincerely yours,
Curator of PADS,
Vladimir Beregovoy

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METHODS FOR DEVELOPING A STANDARD FOR ABORIGINAL BREEDS OF DOGS (WITH THE EXAMPLE OF THE KAZAKH TAZY)

K. N. Plakhov and A. S. Plakhova

POPULATION GENETIC STUDIES REVEAL THE ORIGIN AND EARLIEST HISTORY OF THE DOMESTIC DOG

Mattias Oskarsson and Peter Savolainen

TOWARD A NEW PLACE FOR ANIMALS IN FOLKLORE STUDIES: BIOFACTS AS PRODUCTS OF, AND PARTICIPANTS IN, VERNACULAR PROCESSES (ETHNOZOOLOGICAL EVIDENCE FROM THE COYOTE COURSING TRADITIONS OF THE NORTH AMERICAN PRAIRIE)

Eric A. Eliason

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METHODS FOR DEVELOPING A STANDARD FOR ABORIGINAL BREEDS OF DOGS (WITH THE EXAMPLE OF THE KAZAKH TAZY)

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The existence of any cultured breed is based on four requisites:

First of all the availability of a population of animals genetically similar to each other;

Second, a standard, describing and fixing the distinguishing traits and characteristics of the population;

Third, a stud book, in which all data about the parents and offspring of animals belonging to the breed are recorded; and

Fourth, pedigree documents proving the origin of each animal representing the breed.

Naturally, these requirements became applicable relatively recently and they are determined by contemporary levels of animal science, the legislation of each particular country and the rules of international organizations. In cases where categories of "productive breeds", such as horses, cattle and small agricultural animals, are concerned, the existence of which concerns government interests, the fulfillment of these requirements and scientific research in the areas of selective breeding, raising and using them becomes a necessary condition of their existence. This is quite different with non-productive animals such as dogs. Their breeding, breed management and study are left to public clubs and private enthusiasts. In its rules about new breed standards the leading International Cynological Federation, FCI, indicates only some necessary sections, which the breed standard should contain, but it does not stipulate the methods of collecting and systematizing the data to be used for this purpose. Moreover, to facilitate its use by amateur dog breeders, the descriptions of the dogs' external features are conditional and approximate. As a result, the approaches to writing dog breed standard are simplified and more often than not they do not take account of the contemporary requirements of animal science.

With aboriginal breeds, the key conditions that are necessary when dealing with cultured breeds have historically not existed. Nevertheless, the preservation of aboriginal breeds under modern conditions inevitably demands a shift from spontaneous methods of breeding to the development of cultured breeds. In this process, the following goals should be achieved (Shereshevsky, 1962):

«1. To cleanse such breeds of the consequences of crossbreeding and not to allow crossbreeding in the future.

2. To reject decisively and breed out signs of crossbreeding.

3. To increase the purity of breeding stock by gradually getting rid of animals of unknown origin until all breeding stock dogs have a four-generation pedigree, which will prevent the possibility of genetic segregation.

4. To improve the conformation of newly formed breeds and to work on consolidating the determined coat colors.

5. In the process of selective breeding and evaluation of dogs, to enhance and consolidate the traits that distinguish the different breeds (body structure and size, shape of head, etc.).

Besides this, it is necessary to expand their distribution range and create new centers of breeding and formation of the cultured breeds."

Understandably, specialists working with aboriginal breeds pay great attention to developing their breed standards. On the one hand they must be flexible enough to unite the entire breed without allowing its genetic impoverishment; and on the other they must help to exclude crossbreds from breeding and they must also determine the direction and prospects for future selective breeding. To develop this kind of breed standard, long term research is needed to gather information on the maximum number of traits, characteristic of this aboriginal breed or the other. These include the variation of the breed within its original distribution range, body indices, including the appearance and the necessary basic measurements of the studied population, performance and adaptation to local physical/ geographical, epidemical and ethnological conditions, similarities to and differences from other related breeds, etc. It is important that on the one hand the active standard should strengthen that creative initiative originally used for founding the breed and on the other that it should fix its characteristic shape, while allowing scope for its future improvement.

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Accordingly, in order to achieve a quality standard for this or that breed it is necessary to employ reliable, standardized methods that, regardless of the personal preference of the researcher, give answers to major questions such as the exact descriptions of the external traits described in the standard and why.

In the proposed work, we show methods for developing a standard for aboriginal breeds, which we used during our work on restoring the Tazy in Kazakhstan, starting from 1991. These methods meet the requirements of modern animal science and cynological specifics. Our goal was to develop such a standard for the Tazy, which would, first, clearly define the characteristic traits of the breed, second, confirm the differences from other closely related breeds and, third, provide cynologists and dog breeders with clear information about this breed. We based our work on studies by D. D. Gott (1935), partly fleshed out by A. A. Sludsky (1939) and Shereshevsky (1962). We used extensively methods of comparative morphology (Dombrovsky, 1962) and also methods for evaluating horses by measurements in the USA (Balakshin and Khotov, 1992). We also used monographs and textbooks (Dobrokhotov et al. 1980; Bokken et al. 1961; Chizhik, 1979; Bogolyubsky, 1959; Gambaryan, 1972), and the standards of different breeds of dogs and other domesticated animals.

In the process, we examined over a thousand Tazys and Tazy-like dogs. Whenever possible, we took measurements, photographed and described the dogs. As assistants at dog show rings and local dog shows from 1993 to 1994, we took part in describing and rating over 100 Tazys. Working as experts at dog show rings and pedigree ratings of dogs in 1995-2005, we evaluated independently 150 Tazys. Moreover, we analyzed the reports on hunting dogs at dog shows, which took place in different cities of Kazakhstan over the period 1958-1991, stored in the archives of associations of hunters and fishermen of Kazakhstan and found in private possession. We also studied photo and video materials sent to us by Tazy fans from different regions of Kazakhstan, Uzbekistan, Turkmenistan, the Russian Federation, Ukraine, Estonia, Finland, Germany and the USA. For comparison, we used photographs, measurements and video records of other Sighthound breeds, such as the Saluki, Sloughi, Azawakh, Afghan Sighthound, Rampur, Greyhound, Whippet, Bakhmul, Taigan, Southrussian Steppe Borzaya, Khortaya and other breeds), which were kindly provided by International Tazy Yahoo Group members, of which we are part. Our special thanks go to our compatriots Beket Yessentaev, Nurzhan Kenzheev, Mukhamed Isabekov, Asylkhan Artykpaev, Victor Bulekbaev owner of the largest Tazy kennel "Sunkar") and Aibol Alpysbaev. We also thank Sergey Kopylets (now a citizen of Ukraine), Sir Terence Clark (Great Britain), Vladimir Beregovoy (USA), Ata Eberdyev (Turkmenistan) and Almaz Kurmankulov (Kyrgyzstan).

First, we explain the terminology:

A breed standard (as applied to animals) is a recommended model, a collective agreement about the maintenance and preservation of the breed type and the continuation of the direction of selection. A standard is a complex of the indicators most beneficial to the breed, determining the main direction of pedigree work. It includes the type of body structure, the morphological and functional peculiarities of the animals' organism based on hereditary and acquired traits, the biological basis of productivity, health and adaptability; the external appearance and body structure of the animal, determining the type, anatomical correctness, the character of its constitution and, most significantly, its productivity. A standard must be relatively constant so as to serve as a useful tool for selective breeding for many generations and, at the same time, it should be improved as the breed improves (Mazover, 1985, Soviet Encyclopedic Dictionary, 1989)

Tazy Sighthounds belong to the most ancient breeds of dogs classified as the Eastern Sighthound group and it is most adapted to the nomadic way of life of the peoples of Asia. Tazys are found in Kazakhstan, Uzbekistan, Turkmenistan, Kyrgyzstan, Tajikistan and Western China. Numerous images of them are found in petroglyphs from Southern Kazakhstan, which belong to different historical epochs, as far back as X-XII century BCE (Plakhov and Plakhova, 2005). Travelers from the XVIIth century - P. S. Pallas, I. P. Falk and Georgy - mention the popularity of hunting with Tazys among the Kazakhs. The first cynological descriptions of the Tazy of the Turkmen type were published in the magazine "Nature and Hunting" (in Russian, "Priroda I Okhota"), in 1874 ("Asiat''); the Kazakh Tazy (Krymka) was described by P. M. Machevarianov in 1876; the Kazakh (Kyrgyz), Turkmen and Khiva Tazy were described by M. Bogdanov in 1878 and by L. P. Sabaneev in 1892. In 1939, a breed standard for the Kazakh Tazy, based on descriptions of external appearance and measurements, was proposed by A. A. Sludsky, a scientist from Kazakhstan. This standard was approved by the Cynological Council of the USSR in 1959. Its recent edition under the name of the "Uzbek-Kazakh Tazy" was approved by the "Glavokhota" (the supreme hunting body) of Russia in 1995. This compelled V. G. Gusev (1991) to write that, as a result, the appearance of the breed (according to the

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standard) had changed so much that it now made sense to stop working on it and return to the Saluki or return to the previous standard. Thus, when in 1991, we started working with the Tazy breed, it was necessary not only analyze its situation in Kazakhstan, but also to find out how the breed should look.

The first question, which should be at the cornerstone of any standard for aboriginal breeds, is the question about its ideal breed type and why it should be so.

The second question is which method to choose for writing the standard. At present, there are several methods of writing breed standards:

- analysis of the best representatives, the cynometric measurement of their points and writing a standard according to the obtained data from the best dogs (D D Gott, 1935). The best representatives are selected here by a committee of the most expert authorities of this or that breed. This method is most suited to cultured breeds that are already formed and consolidated and was demonstrated on island setters (the Pointer, Irish and English Setters).
- analysis of available dogs, cynometric measurement of their points and writing a standard according to obtained data. A. A. Sludsky used this method (1939) for writing the breed standard of the Kazakh Tazy.
- analysis of available dogs, selection of the best foundation stock dogs, trial breeding, strict selection, choosing the best type and writing a standard based on its external appearance and then continuing pedigree work and further improvement of the standard in accordance with changes in the breed. For example, this is how the standard for the Russo-European Laika was created (Voilochikov and Voilochnikov, 1982). Breeders use similar methods in developing new agricultural breeds.
- the method of "brain storming", when available information about a breed is insufficient or there are too many opinions about it and the standard is created by collective discussion. This method is most suitable for ornamental breeds and generally it is not used for utilitarian breeds.

The third question about standards of utilitarian breeds of dogs is about the direct link between the best external appearance and the best working qualities and how to achieve the maximum correlation between appearance and function.

The fourth question is directly linked to the free reproduction of aboriginal breeds and the presence of a considerable number of dogs of mixed origin. The standard for aboriginal breeds should reject (exclude from breeding programs) the greater part of the mongrels and ideally all of them, especially those mixed with cultured breeds. On the other hand, the standard, which is meant to work with aboriginal breeds, should not exclude, especially in the early stages, types currently available in the breed so as not to impoverish gene pool of the breed.

There is one more problem, which at first glance is of secondary importance, which determines how the standard should be written – the approach to its preservation. "The absence of clarity and precision in the standard creates a favorable environment for controversies, quarrels, discontent and other problems" (Semhenkov, 1988). As A. P. Mazover (1985) wrote: "Loading the standard with descriptions of many small, insignificant points and excessive details is unreasonable… However, it is equally wrong to try and simplify all standards to fit one, uniform, monotonous scheme."

Thus, putting together a standard for any breed should be based on the one hand on knowledge of the breed in all its diversity of types within the breed and of the local traditions of working with it and on the other on understanding the theoretical aspects of the different areas of biology and animal science, especially the teaching of body structure (constitution) and external appearance.

So, what kind of studies, conducted by us during the 15 years (1991-2006), did we finally lay down as the basis of the Tazy standard? What methods did we use in our work with this breed?

1. Investigation of variation within the breed.

Whenever we study any breed of domesticated animals (or a wild species), we must take into account one of their most important features: any breed (species) is constant (in its appearance and characteristics), but its constituent individuals are not constant (they have individual differences) (Bogolyubbsky, 1940). This is the characteristic of variation (Yablokov, 1966). An active standard should, on the one hand, establish the breed ideal (the most preferable type) and on the other should allow some variation within the breed.

Among all the possible manifestations of variation that are significant during work on the breed standard, the following seem the most important:

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1.1. Chronographical variation (in the sense of "variation and changes and their manifestations in groups of individuals [of one breed, authors] at different periods of time (Yablokov, 1966);

1.2. Geographical variation (in the sense of variation among certain groups of individuals [constituting one breed, authors], living under different conditions of climate, landscape, etc. (Yablokov, 1966);

1.3. Linear variation ("variation of the linear parameters of an organism, a system of organs, single organs and their parts" (Yablokov, 1966).

Moreover, other types of variation are also subjects for study, such as ethological (behavior), color (variation of coat color), variation associated with age and sex, which also are used in breed standard. It is necessary to recall that because, for completely understandable reasons, we cannot dissect our dogs for anatomical investigation, we choose to take into account those points, which show significant variation and which can be easily detected and satisfactorily defined, that best fit the type, form and manifestation of variation under study. By characteristics we mean any peculiarities of the organism, which can be studied and measured quantitatively: -

1. They should fit the type, form and manifestation of the studied variation;
2. They should be variable enough;
3. They should be easy to observe and well defined;
4. They should involve different systems of organs;
5. They should characterize the same organs in different ways…" (Yablokov, 1966).

In cynology (and also in animal science), different points of the body serve this purpose ("parts of the body used for evaluating their body structure, the development of breed characteristics, the development associated with age and sex and the evaluation of their health, breeding value and productivity) (I. A. Chizhik, 1979), most of which can not only be described, but also measured.

1.1. Investigation of chronographical variation. This includes the following:

Work on the reconstruction of the ancient appearance of the breed. This part of the study on the breed consists of analyzing all accessible sources, such as petroglyphs, images on shrines, tombs, paintings of different epochs, descriptions of past travelers and materials from archeological sites. It serves as a historical foundation for the standard and it allows us to trace the stages of development of the breed and the dynamics of changes in its appearance and distribution range.

Descriptions of dogs in the works of our predecessors of the last half of the XIXth century and the first half of the XXth century greatly help in the investigation of the Tazy, as well as any other breed. At that time the old way of life and ethnographic composition of the population of Southwestern Asia still remained intact; the Tazy was the basic hunting dog in the region and did not undergo significant changes, which came later as a result of the loss of the tradition of working with this breed, or intensive interbreeding with other breeds. At the same time, the terminology and ideas used by authors began to meet better the principles of contemporary animal science and even the descriptions of dog breeds became considerably more detailed. Furthermore, photography and scientific drawing were invented.

The memories and stories of witnesses provide valuable material about aboriginal breeds and traditions of working with them, especially when they can be corroborated by photographs and drawings. Data collected by this method should be treated with some caution, because of various factors that at times might be influenced by personal bias.

The study of archive materials supplement the preceding stages of investigation.

1.2 Investigation of geographical variation

No less important for understanding the Tazy is the study of its diverse appearance within its geographical range (its geographical variation). This is even more important because Kazakhstan, one of the major countries of its original distribution, is one of the ten largest countries in the world; its territory is greater than the area of Spain, Portugal, France, Germany, Italy and Great Britain put together. In Kazakhstan it is possible to meet almost all the ecological/landscape complexes of the Old World (from tundra and forest-tundra to northern and Turanian deserts and arid subtropics and from vast plains to highest mountain systems with considerable climatic differences in temperature, humidity, amount of precipitation, etc. Data on chronographical and geographical variation allow the evaluation not only of the temporal dynamic of the external appearance of the Tazy, but also the differences caused by the physical geographical conditions in the different regions of its environment as well as by differences in customs, traditions and way of life of the peoples of Asia, who breed these dogs, and by the various kinds of hunting specializations. All these

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provide a basis for distinguishing types within the breed, for comparisons of their appearance and hunting qualities and, finally, for determining the most promising future directions for the formation initially of a transitional breed and, eventually, a cultured purebred.

1.3. Investigation of linear variation

This method produces an objective result, little influenced by the personal taste of a researcher. We filled out a special card on each dog measured and described by us (Table 1, 2). Cynometric data stored on each of the cards were supplemented with descriptions of appearance of every dog, data about its performance at show and field trials and data on its origin and offspring. Similar cards were used for all Tazys described by other specialists at dog shows and trials in Kazakhstan in the last 40 years. For this purpose we used data from reports stored in the archives of Kazokhotrybolovsoyuz (Russian language abbreviation for Union of hunters and fishermen of Kazakhstan, comment by translator). For the visual examination of dogs, we used a special scale of measurements, which initially included 63 measurements, some of which have never been used before in cynology. Then, we reduced their number to 21 and finally to 11 conventional measurements used by cynologists. To study linear variation, starting from 1991, we examined over 500 Tazy dogs of various degrees of purity, 15 Central Asian Ovcharkas and 3 Borzois, the best of which were measured a second time. We also used the results of measuring Tazys, Salukis and Khortayas at our request by members of the Tazi Yahoo Group, of which we are members. The transition from the larger number of measurements to the smaller one came about as we gathered data on the breed, when the answers to some basic questions about our future breed standard were obtained. Measuring was done with a regular measuring ruler for height and a tape measure. All measurements were taken by one person with the same set of instruments. Besides the numerical data that we used, we described the appearance of each dog according conventional standards used in cynology and we photographed each dog from three different angles (later, we used only two angles).

Unlike D. D. Gott and A. A. Sludsky, we analysed the results of measuring by converting all the parameters in the size indices and not by average values or mode (as the most frequently met numerical indicator in a variational series is called) but by criteria of a useful charcter. For this purpose, we selected indices for each indicator according to the degree of their manifestation (small, medium and large) and then we checked the character of their distribution among analogously formed groups of dogs (by , for example, their speed (slow, medium and fast), by their aggressiveness to game animals (aggressive, medium, not aggressive), by endurance (tireless, medium, weak), etc.

We compared the results with data in the literature, photographs and evidence from hunters of the older generation. Similar studies were conducted on racehorses to forecast the qualities of foals from thoroughbreds in the USA and they gave an exceptionally high percentage of correct forecasts (helping to discover 19 champions) (Balakshin and Khotov, 1992). Analysis of this kind seems more suitable for creating a standard for an aboriginal breed than the mere description of variation of points or the average numerical indices (D. D. Gott and A. A. Sludsky, 1938). From examining aboriginal dogs that are considerably contaminated genetically by crossbreeding, one comes to the conclusion that at present only a few individual dogs appear purebred and if you include in the account the mass of mixed dogs then the best would become easily dissolved in them. It would be equally difficult to select the best dogs on the basis only of information obtained from hunters, Tazy amateurs or specialists, as D. D. Gott (1935) suggested, because, as already mentioned, in the case of this breed, as with other aboriginal dogs, it is hard to find two similar opinions about the same dog.

Table 1. Card and list of measurements of Tazy (cm) we used during different periods of investigation (asterisk marks measurements used in the final stage of the work).

Obligatory information	General measurements	Measurements				
		Head	Body	Forelegs	Hindlegs	Additional measurements
Name of dog	*Height at withers	*Length of head	*Length of neck	*Length of shoulder blade	*Length of thigh	Length of tail

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Data about owner*	Height at pelvic bones	*Length of muzzle	Circumference of neck at base	*Length of arm	*Length of lower thigh	Length of dewlap
Sex and age of dog*	Height at the tail base	Height of head	Length of withers	*Length of forearm	Length of metatarsus	Length of hair
Date when measuring was done*	*Oblique body length	*Width of skull	*Circumference of chest	Length of pastern	Length of foot	Angle at forearm/shoulder blade joint
	Distance from withers to tail	Circumference of muzzle at stop	Depth of chest	Length of foot	Width of foot	Angle at patella
	Weight (Kg)	Circumference of muzzle at middle	Width of ribcage	Width of foot	Height of foot	Croup angle
	Upper line length	Length of ear	*Width of chest from the front	Height of foot	Circumference of thigh	
		Length of furnishing on ear	*Length of sternum	*Height of foreleg	Height of leg to patella	
		Width of ear	Length of back	*Circumference of pastern	Height to sciatic processes	
		*Length of canines	Width between shoulder blades	Length of furnishing hair		
		Circumference of skull	Length of loins			
			Width of loins			
			Circumference of abdomen			
			*Distance between huckle bones			
			*Distance between sciatic processes			
			*Length of pelvis			
			Length to base of tail			
			Rear width			

2. Investigation of age and sex related variation

Among dogs, growth rate varies individually. Naturally, in cases of inferior or inadequate feeding, dogs grow slower and sometimes considerably slower. With age the Tazy's length and color of coat and indeed its physical development also change.

As in other breeds of dogs and also in other mammals, males are bigger and sturdier than females, if compared with dogs of the same type, and at the same time, females are more elegant and graceful than males.

3. Investigation of variation in pigmentation

Coat color is among the most important points for selection in all dog breeds. On the one hand, each breed is characterized by a certain range of coat variation. Other coat colors may be faulty and disqualifying, because they indicate crossbreeding. At the same time, one and the same gene is often responsible for a certain coat color and it can suppress the display of other coat colors or it can affect simultaneously several indicators or be linked with other genes (Ilyina and Kuznetsov, 1969).

Unfortunately, cynological science is lagging seriously behind in the use of the achievements of modern animal science and genetics of coat colors, knowledge of which in these areas is used mainly by cat and furbearing animal breeders. From this point on there are inevitable difficulties in studying coat colors (Blokhin et al. 2001):

The same coat color has different names in different dog breeds. For example, agouti is called in Russian "boar like, deer like, salt and pepper, sable, murugy, burmatny, gray, sandy, clay-like, zonal gray, zonal red, domino, brown", etc.;

The Tazy is characterized by the prolonged development of certain coat colors, it may take 1-2 years, which makes their identification difficult;

The determination of coat color may be subjective, depending on the experience of different specialists;

Reliable statistical data are not always sufficiently available to determine the genetic basis of a certain coat color;

Shades of coat color may change, because of difference in length and condition of the hair;

There are different opinions about the genetic background of coat colors among authors of many cynological publications who often contradict one another;

Authors of different descriptions do not always name correctly the Tazy's colors. Above all black and tan was incorrectly identified, especially in cases where it was combined with a black mask and muzzle. Such dogs are usually recorded as black or black and white.

In the course of studying coat color, we examined about 900 Tazys, including 493 purebred ones, both personally and in photographs kindly sent to us by our correspondents. Among them were 352 dogs from Almaty and Almaty Province, 88 aboriginal dogs from different parts of Kazakhstan and 53 dogs from Uzbekistan, Turkmenistan, Russia, Ukraine, Estonia, Finland and the USA. As a result of our analysis, we established the frequency of the Tazy's different coat colors (Table 2).

Table 2. Frequency of coat colors in Tazys (absolute numbers above and percent below)

№	Name of coat color	Coat color frequency in Tazy			TOTAL (absolute) ---------- (%)
		Almaty and Almaty Province	Abroad	Aboriginal population	
1	Red and its variants ("murugy" or sable; buff or cream and agouti red)	228 64,8	29 54,7	50 56,8	307 62.3
2	Conditionally white* (pale, almost white): red and agouti red	52 14,8	10 18,9	13 14,8	75 15.2
3	Black	29 8,2	1 1,9	10 11,4	40 8.1
4	Black and tan	26 7,4	4 7,5	6 6,8	36 7.3
5	Gray (agouti gray)	17 4,8	9 17,0	9 10,2	35 7.1

	TOTAL	352 70,9	53 10,9	88 18,2	493 100

*NB – The gene determining white coat color is not found in the Tazy. Coat colors, which look white, are the result of the "lightening" effect of other colors (such chinchilla and red).

We found that the frequency of "light" colors was 77.5% and the frequency of "dark" colors was 22.5% among the studied populations. Among all coat colors, red with its modifications was undoubtedly the most frequent (62.3%.). It is interesting that the share of "dark" coat colors was slightly higher among Tazys of aboriginal origin than among purebreds, including those from other countries than Kazakhstan. This is natural, because in the conditions of aboriginal breeding the external points are less important than working qualities. Among crossbred Tazys, which we did not include in our general statistics, piebald, brindle, black and gray were predominant.

Our investigations into the peculiarities of display and inheritance of coat colors in Tazys allow us to draw the conclusion that all coat colors of Tazys are modifications of one group of genes, determining the agouti hair pattern, under the influence of genes that weaken black and yellow pigments or both, and also genes producing ticking and Irish marking. In other words, the Tazy is characterized by colors called "wild", because they occur in wild canid ancestors related to dogs. This is natural, because the Tazy is a very old breed, bred by methods of human selection for several thousands of years. We also found the following:

- Pure white, determined by the specific white color gene, does not occur among Tazys. All colors that look white are actually red, sable or chinchilla (agouti) with considerably weakened pigmentation. All three of these variants of "white" coat are distinguished by the presence or not of some black hairs and by the pigmentation of the nose, skin, and eyes and also by some age related changes of color.
- In cases of recessive red color, lighter pigmented brown or liver nose is allowed. An unpigmented pink nose is a fault.
- White markings, not breaking the basic coat color and big white patches on the head, neck, chest, abdomen and legs are not desirable.
- Ticking of the same color as the basic body color is allowed on a white background on the chest and legs, such as black or red ticking, which should be the same as on the rest of the body. On black and tan dogs, red ticking or black ticking is allowed on white spots, according to the distribution of the basic black and tan pattern. For example, red ticking, where the basic background is red and black ticking on body parts with a basic black background.
- Pure black coat color without at least small white spots is undesirable.
- Practically all Tazy colors assume their final condition with age.
- All other Tazy colors are clear signs of past interbreeding with other breeds: solid black, piebald, brindle, brown and pure white.

4. Investigation of Tazy behavior (ethological variation)

We found particular behavior patterns among Tazys, which distinguish them from other dog breeds.

5. Investigation of genealogy

Surveying Tazys in different regions, we talked with their owners and, when possible, got information about the origin of their dogs, including the addresses where the parents lived. Thus, we reconstructed a chain, each link of which required further verification and confirmation. This is how we were able to gather information not only about ancestors of certain Tazys, but also to evaluate the inheritance of various points, including traits of authentic Tazys and those resulting from crossbreeding with other dogs.

6. Investigation of related breeds

When working on the standard of a certain breed, including the Tazy, it is very important to take into account those points which enable us to tell them apart from other similar and closely related breeds. Because of the similarity, for example, between the Tazy and the Saluki, in the dog world there are many discussions and doubts about whether it makes sense to work specifically on the Tazy and there are even suggestions to "close" the Tazy breed completely and focus on the Saluki, which already has international recognition as a breed. This would be like the continuation of a "double standards policy". In registering dog breeds from European countries or the USA, the number of differences is not important. For example, such breeds as the Airedale Terrier and the Welsh Terrier, the smooth and wirehaired Fox Terriers, the Welsh Terrier and wirehaired Fox Terrier, the Czech Faussek and the wirehaired German Pointer (Drathaar) – the list could be much longer. Who can find more than a single

difference between them? Are these differences essential? The conclusion is that the presence of differences within one breed or another is not really important.

Putting together a standard

After completion of the work on Tazys, we started to work on the standard for this breed, which would be the quintessence of data we had gathered. In the process of working on the standard and describing the individual features, we preferred to use relative indices. Moreover, we tried to use precise cynological terms.

First of all, the appearance of the breed, described in the standard, must fit the characteristics of the entire group of dogs to which it belongs. In the case of the Tazy, this is the entire Eastern Group of Sighthounds. All Sighthounds possess the maximum specialization of running fast; and they have long legs by comparison with other dogs, they are sinewy and lean and have a pointed muzzle. Sighthounds never have a loose, coarse body construction and they cannot have drooping eyelids, lips or short legs. "The specialization of predators to run fast has developed in two ways: the fast dash over a short distance or chasing prey over long distance" (Gambaryan, 1972). These two types of fast running of predators meet the requirements of economy and speed and under natural conditions they never occur in one species. However, artificial selection has allowed the combination of both abilities, both the fast dash and endurance running in one breed, which is the Eastern Sighthound, and particularly the Tazy.

What did we choose as the basis for our standard? Primarily the utilitarian quality of the breed. This facilitated our work, because the Tazy belongs to highly specialized group of breeds, in which each detail of the external characteristics has been polished by centuries of selection and serve three major qualities: speed, endurance and maneuverability. To analyze the working qualities of the Tazy, we used the following postulates:

The Tazy is a Sighthound capable of running fast for a long time.

The Tazy is a breed different from the majority of other Sighthounds in the ability of using its nose to search for game.

The Tazy, if kept, trained and fed right, is distinguished by a high degree of endurance.

Having caught the prey, the Tazy should kill it (if the game is big, the dog should stand and wait until the hunter comes up).

The Tazy is a versatile breed and can be used for hunting all major species of animals in Central and Southwestern Asia.

As we are talking about civilized work with the breed, the Tazy must have, along with all the other qualities listed above, the typical appearance and differ from other closely related breeds. As the Tazy is a hunting dog, its appearance must be measured by its direct utilitarian purpose. Therefore, we expect to find a direct correlation: the better the external appearance, the closer the dog comes to the ideal model of the breed as described in the standard and the better its hunting potential should be. In the case of deviations from the norm required by the standard (faults and deficiencies, depending on the degree of their manifestation), there will be signs that significantly diminish the possibility of using the Tazy for hunting or they may also indicate evidence of crossbreeding or incorrect upbringing.

Therefore, in its external appearance as well as inside the Tazy should possess the appropriate characteristics to ensure its ability to run fast over long distances, maneuver, search and show aggression towards its prey, defined by its ability to catch game. Thus, taking into account the high specialization of the Tazy primarily to run fast, for which purpose the breed was created, there are no insignificant details in its traits. Deviations from the ideal body construction dictated by the breed standard are naturally unavoidable, but for each such inconsistency the dog pays a price in loss of speed, endurance, maneuverability and ability to catch the prey. The more such deviations in conformation are accumulated in a dog, the more quality it looses as a hunting dog.

1. Type of constitution type (construction). In Kazakhstan, Tazys have several different types of body construction: lean-fragile, lean, lean-sturdy, sturdy-lean, sturdy-coarse and coarse. An analysis of their working qualities has shown that dogs of the lean-fragile type and lean type do not have enough endurance and can hunt only under the conditions of the warm climate of Southern Kazakhstan. Tazys with coarse and coarse-sturdy type are good and strong at wolf hunting, but they are not fast enough and actually cannot catch hare. They are too heavy (40-60 kg). Genealogical data have shown that Tazys of this type are mixes. Therefore, the most preferable types of Tazy construction are lean-sturdy and sturdy-lean. Males of this type are 23-30 kg and females are 17-24 kg.

2. Height at withers. Male Tazys of the various types occurring in Kazakhstan and the neighboring countries of Central Asia in the past and at present are 50-75 cm at the withers and females are 52-70 cm. The analysis of

their working qualities has shown that too small Tazys (females smaller, then 58 cm and males smaller then 63 cm) have significant difficulties both when catching foxes and bigger animals and when running on very rugged terrain, in thick grass or on snow. Too large dogs (females over 65 cm and males over 68 cm) are not fast or maneuverable enough and lack endurance, although they are very strong. Genealogical data show that such large dogs have other breeds among their ancestors. Therefore, the height of Tazys of the Kazakh type with good hunting potential should range from 58 to 65 cm for females and from 63 to 68 cm for males.

In Southern Kazakhstan, Northern Uzbekistan and in Turkmenistan, winters are very mild with minimal snow covering. Here, the basic animals that are hunted are tolai hare, fox, corsac and antelope (called locally jeiran). In such conditions, Tazys must be very fast, very maneuverable and have endurance. Therefore, males of the Turkmen type are smaller - 60-65 cm and females are 53-60 cm. In these Tazy, any lack of strength is compensated by considerable aggression towards the prey.

3. Coat. The coat of Tazys is very variable. The "classical" Tazy has short, soft, straight, close hair on the body almost devoid of undercoat. On the ears the hair is longer, slightly wavy, forming feathering ("burka"), covering the entire ear and hanging below the ends of the ear. Feathering is present on the posterior sides of the hind legs, front legs and lower side of the tail. There is also a smooth variety of Tazy without feathering.

4. Head. Three basic shapes of head are found among Tazys: -

- a Setter-like head, with an almost rectangular muzzle, slightly narrowing towards the nose and an oblong oval skull.
- a head with a pointed muzzle and a rounded, slightly oval skull.
- a head with an extended muzzle pointed like a pipe and an oblong oval skull.

Our analysis showed that Tazys with a head of the first type do not have searching ability, regardless of the methods of their keeping and rearing. Tazys with a head of the second type have well developed searching ability. Tazys with a head of the third type do not always show searching ability. It follows therefore that the second type of head shape is most desirable, then the third type, while the first type is not acceptable at all. Genealogical data have confirmed that Tazys with a Setter-like head are most often descendants of Russian Borzois, which characteristically do not search for game.

5. Upper bodyline. Among Tazys, three variants of upper bodyline are found:

- Upper line without well-pronounced withers and without arching loins.
- Upper line with distinctive withers and slightly convex loins.
- Upper line with powerful, well pronounced withers and straight loins.

We have found that regardless of conditions of keeping and rearing, Tazys of the first type are not fast and lack maneuverability. Tazys of the second type are moderately fast and Tazys of the third type are the fastest. Therefore, the third type is the preferred kind of upper bodyline, and then comes the second type, while the first type is totally unacceptable. Genealogical study has confirmed that Tazys without withers and convex loins are most often descendants of Russian Borzois. Tazys of the second type are descendants of mixes in different combinations. Interesting differences in upper bodyline can be observed among different Sighthound breeds. Selective breeding of European Sighthounds has led to the formation of characteristically weakly pronounced withers combined with convex loins. Sighthounds of the European group have outstanding speed running over short distances. Their gallop looks like flight, beautiful and fast above the ground.

Sighthounds of the Eastern Group, in our case Tazys, are different. They are often called "straight backs", because of the absence of or only weakly developed convexity of the loins. They have powerful withers instead. Their backbone is extraordinarily flexible and their upper bodyline forms a depression, which by no means indicates any weakness. This trait we call "reverse spring". This is where the secret of speed and endurance of Tazy lies. Precisely this "reverse spring" gives the impression of the Tazy running snake-like close to the ground, which allows them to make sudden sharp turns. This permits them to cope with obstacles and follow right behind fast and sharp turning game like tolai hare.

6. Chest. The shape of the Tazy's chest is very diverse. It can be short, medium long, long, deep, insufficiently deep, shallow, barrel-shaped and flat. The manubrium hump can be well developed, weakly developed or not pronounced, etc. Our analysis has shown: -

a) A barrel-shaped chest and a manubrium protruding forward (beyond the shoulder line) in Tazys is a sign of poor speed.

b) A short, shallow or flat chest is a sign of a dog lacking endurance.

The genealogical method has shown that a short, barrel-like shape of chest and a protruding sternum are evidence of mixed breeding.

Our research has shown that good purebred Tazys have a deep, long and voluminous chest, which is most desirable. In the front, it reaches to the elbows or remains slightly above the elbows and in the posterior part, where the xiphoid process ends and the transition to the abdomen starts, it comes down to below the elbows. Because of the very long cartilages of the false ribs, it forms a sharp transition to the abdomen (tuck up). The distance from the anterior part of the manubrium to its posterior end is approximately the same distance as from the end of the xiphoid process to the last rib. In the area of the shoulder blades the rib cage is slightly flattened and behind the shoulder blades it gradually widens until the last pair (9th) of true ribs (barrel-like). In the widest part the chest is wider than the croup. In cross section, the Tazy's chest is oblong oval (wide in the upper part and narrowing down considerably. The width of the chest in its anterior lower half should be equal to the distance between the dog's front legs so that even during the fastest gallop its elbows do not turn outwards. This shape of chest of Tazy ensures excellent speed and endurance.

7. Legs. The legs should be long and lean, with visibly powerful strong muscles and well developed tendons. Increased leverage is achieved not only at the expense of the general parts of the legs but also at the expense of straightening the angles at the joints. This is known in the cheetah (Gambaryan, 1972). Too slender bones in the legs combined with weak muscles usually are evidence of inbred depression. Thick bones, often not long enough and with coarse muscles, indicate crossbreeding. Our investigations also showed that the fastest Tazys have the following leg parts of equal length: arm, forearm, thigh and lower thigh.

8. Tail. The Tazy's tail shows considerable diversity, just as other features of the breed do. It can be thin or thick and high, medium or low set and saber-shaped carried down; during movement the dog carries its tail no higher than its back and rolling over the back, during movement the tail is carried above the back sometimes in a ring as in Laikas. A ring at the end of tail may be formed of fused or unfused vertebrae or hook like or with a larger ring at the end, and the tail may be without any ring or hook.

Feathering on the tail may be absent or it can be thick and long, short and sparse and it may start from the base of the tail or from the middle.

Purebred Tazys typically have a thin, low-set tail. When unrolled the tail should reach to the hocks. It is saber-shaped and carried low, when the dog is quiet. At the end of the tail there is a small ring formed of unfused vertebrae and it is always present. During movement, the dog does not raise it above its back. The genealogical method has shown that a thick tail, with long and thick feathering, beginning from the base of the tail or a tail reaching below the hocks when unfolded or a ring at the end of the tail formed of fused vertebrae are evidence of crossbreeding.

CONCLUSION

As a result of our work, the appearance of the Tazy, free from the preferences of individual cynologists or groups of breeders, has gradually begun to emerge. The obtained data has allowed us not only to describe the features that are characteristic of the breed but also to find an answer to question: why should Tazys look precisely this way? Some of the traits that have been carried into the standard as basic ensure the maximal potential for using the Tazy for its main purpose - for hunting. In the first stage of our work on the breed standard, we put together a description of the Tazy and a schematic model of the ideal of the breed. Then, on the basis of our own kennel "Elchor", which is the Tazy section of the Almaty Club "Cynologist", of the Republican Club of Breeders of Purebred Hunting Dogs and of its other branches, the National Club of Tazy and Tobets of the Kazakhstan Republic, with the great help and support of Tazy fans from different parts of Kazakhstan we carried out pedigree work to develop first a transitional and then a purebred type of Tazy to meet the requirements of the ideal of the breed that we had developed. Further verification of the resulting population has shown that the direction we choose was correct: namely that these Tazys proved to be without rivals both at numerous dog shows and at actual hunting in whatever regions of Kazakhstan where they were brought. Some traits of this kind of Tazy have found expression in the breed standard approved by Cynological Federation of Uzbekistan and by the Russian Federation of Hunting Dog Breeders in 1995.

All of this has allowed us to start writing the Kazakh standard for the breed. Concurrently with this, in order to demonstrate the effectiveness of the method that we have developed, we have prepared a new edition of the standard for the Central Asian Ovcharka. With effect from 4 October 1996, these standards were approved as working standards by the Cynological Association of the Kazakhstan Republic "Sirius", which has since been

dissolved. In 2000, we prepared a new edition of the standards of the Tazy and the Kazakh Tobet, which after consideration in the Cynological Soviet of Kazakhstan were approved by the Kazakh Hunting and Fishing Union, which at that time still dealt with the breeding of hunting dogs. At present, these standards are accepted as working standards by the majority of the cynological clubs of Kazakhstan involved with hunting dogs. In the Tazy and Tobet standards that we have developed, we have described in great detail all the basic features of the breed and have supplemented it with further comments, which should help to evaluate correctly the dogs' merits and deficiencies. Now, success with the preservation of the aboriginal dog breeds of Kazakhstan will depend on a civilized style of pedigree work on them. If as a result we are able to save these breeds from degeneration and if we can include them in the worldwide cynological process as participants with full rights, this will be our contribution to the restoration of the Tazy breed in its home country.

The methods for creating breed standards for aboriginal breeds that we have developed can be extensively used for the creation of similar standards for other breeds of dogs and not only aboriginal ones. It is all the more so after we tested it on other breeds, such as the Kazakh Tobet and Central Asian Ovcharka, and showed its applicability. This method can be widely used for writing standards for utilitarian breeds, when the need for the preservation of the working qualities typical of a certain breed is urgent. Thanks to this method it is possible not only to find the correlation between the external appearance (form) and the working qualities (function) of dogs but also to exclude from the make-up of aboriginal breeds crossbreds of different generations.

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POPULATION GENETIC STUDIES REVEAL THE ORIGIN AND EARLIEST HISTORY OF THE DOMESTIC DOG

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Before population genetic studies of domestic dogs were initiated at a broad scale 10 years ago, few facts were known about the origin and early history of the dog (Clutton-Brock, 1995). Even the most fundamental facts, such as the number of founding events and their geographical locations and dates were unknown. There has also been very little known about the origin and history of the different dog breeds (Clutton-Brock, 1995). The unclear picture given by archaeological and historical data has therefore prompted population genetic studies of the dog.

This research group has, through studies of a 582 base pair fragment of mitochondrial DNA (mtDNA), unravelled some of the first detailed facts about the origin and early history of the domestic dog. In a first study we could show that the dog probably has a single origin from wolf, somewhere in East Asia (Savolainen et al., 2002), based on the finding that all dog populations world-wide share the same mtDNA types and that East Asia has the largest genetic variation. In a second study we showed that the Australian dingo originates from this population of East Asian domestic dogs (Savolainen et al., 2004).

These studies are based on a unique sample collection, unmatched by other research groups, consisting of plucked hairs and mouth swabs from >2,000 dogs. The samples are collected from all over the world, mainly through contacts with dog-interested people. The unique value of this collection is that it contains representative samples from a large number of regions around the world (in contrast to most other collections of domestic animals which consist mostly of European breeds), giving a comprehensive picture of the genetic variation among dogs world-wide. The detailed conclusions about the history of the dog and the dingo drawn in the earlier studies would not have been possible without this sample collection.

However, much work remains before we have a final, fully reliable, picture of the origin of the dog. Since mtDNA is maternally inherited, the mtDNA-studies can only describe the history of the female dogs, the history of the males being only indirectly monitored. Studies of a paternally inherited marker is therefore necessary, to give a more complete picture of the genetic history of the dog. We have therefore studied Y-chromosomal DNA sequence variation in a world-wide sample of dogs. Analysis of the Y-chromosome is much more laborious than analysis of mtDNA, and therefore only 150 dogs were studied. However, the Y-chromosomal data corroborates largely that of mtDNA in that there seems to be a common original gene pool for dogs all over the world, and that there is a tendency of larger genetic variation among the East Asian samples.

Furthermore, the region identified in the earlier mtDNA based study as the geographic origin for the dog was very coarsely defined as the Asian continent east of the Ural mountains and north of the Himalayas. In order to define more precisely the place of origin, we have improved the sampling in Asia (especially for China, SE Asia, Siberia, India and Iran) to allow a comparison of the genetic variation between a large number of subregions in East Asia. This analysis shows a considerably greater genetic variation in South-eastern China than in other regions, indicating a first origin from this region. It is clear that European dogs, the morphologically most diverse dog population, represent only a subgroup of the global population.

We conclude that the genetics based studies of the origin of the dog gives a more and more detailed picture, and that analysis of Y-chromosomal data corroborates our earlier mtDNA based studies.

The next step in our research is to study the first migrations of dogs from East Asia to the rest of the world, specifically Europe, the Middle East, Africa, the Americas and Island Southeast Asia and Australia. We will also study the earliest development of dog breeds, starting with a study of Sighthound, based on samples from virtually

all types of Sighthound. Through our continued studies, the knowledge about human history, as well as the history purely of dogs, and about the evolution of morphology through breeding, will be enriched.

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TOWARD A NEW PLACE FOR ANIMALS IN FOLKLORE STUDIES: BIOFACTS AS PRODUCTS OF, AND PARTICIPANTS IN, VERNACULAR PROCESSES (ETHNOZOOLOGICAL EVIDENCE FROM THE COYOTE COURSING TRADITIONS OF THE NORTH AMERICAN PRAIRIE)

Eric A. Eliason
Photographs by Scott R. Squire

Guy Marts and his dogs scan the prairie for coyotes from their rig.

Ron Boulder and Guy Martz, Subjects of Co-evolution

Mission, South Dakota junk dealer Ron Boulder leads us past piles of rusted metal cogs in disintegrating cardboard boxes and through stacks of scrap yard-destined old TVs to the backyard where his dog runs are. 1

[1] This article follows fieldwork conducted in December of 2004 in South Dakota and Nebraska with coyote dogs and their owners. The descriptions of hunting and hunters in this article sometimes conflate events and paraphrase discussions to streamline narrative flow and focus on ethnographically significant data. No characters have been conflated and their quotes and observations remain as close as possible the actual wordings and attitudes recorded in the author's fieldnotes of days spent hunting and chatting with Ron Boulder, Guy Martz, Jim Haney, and Todd Fritz. Special thanks is due to these hunters and especially Eric Eliason's uncle and aunt, Tom and JoAnn Eliason

We squeeze by his coyote rig, a 1980 half ton GMC pickup with two large home-welded metal boxes set high on the bed. Each rig box is divided into two chambers for four dogs on each side when full. Ron reaches into the cab to yank on a self-fashioned rope and pulley system that springs open one of the rigs' two bottom-hinged side-facing metal doors. "This is how I let the dogs go after Mr. Coyoat." Ron smiles and then re-shuts the box. When closed, the door leaves a narrow slit eye-level so the pack can poke their heads out to scan the prairie for quarry. With the first yelp of desire from the rig, a tug on the rope lets loose the fastest land animals in North America. "They leap 20, 25 feet before they hit the ground full sprint," says Ron.

"I'll turn mine out going 80 on back roads and they'll just take the leap and fly. They're land rockets," says Guy Martz, a seasoned bachelor cowboy who has come along to hunt with Ron. "Once you've seen 'em run you'll never be the same again, by golly."

Ron's hounds excitedly pace their chain-link cages, mouths shut, eyes darting, looking for any hopeful sign they might be going somewhere. Toned muscles flex and coil beneath taught skin and across long bones. Their eyes glow focused yet calm. Everything about their sleek shape and smooth temper seems uniformly suited for serious speed. Other features that don't matter for this purpose come in greater variety. They are all colors—frosted greys and blotched yellows, mottled browns, tiger striped, and brindle. Most have Marine Corps recruit short hair but some sport the coarse wavy coats of long-ago Scottish deerhound or borzoi crossbreeding. A few show the longer floppy ears and softer hair of Arab saluki great-grandparents (Salmon 1999: 25, 31, 64, 100).

"They are not really greyhounds, you know, like you would find at the track," says Ron, "They are bigger, a new breed—though no dog fancy people would ever say so—the American Coyote Hound (Salmon 1999: 98)."

Guy Martz, coyote hunter.

A dog puts his chin in Ron's outstretched hand for a scratch through a hole in the fence. "You know," Ron says, "those animal rights folks don't get it. We and our dogs are doing the coyotes a favor. We kill all the fat and stupid ones, improving the breed. It's evolution. It's all natural and we're part of it. Over the centuries, since even before Col. Custer and Teddy Roosevelt were doing this (Salmon 1999: 55), we've been making coyotes faster, smarter, better." He pauses then adds, "and they've been making us better too."

"Coyote dogs are no good as guard dogs though," Ron continues. "Anybody could drive in here and say "hup hup" and they'd jump right in the rig to go hunt. But man can they hunt. Last season, these ones here got eight coyoats in one day!"

As we walk back out to the front yard to get ready to go, Guy Martz mutters under his breath, "Yeah, he gets eight in one day in his bullshit."

Coyote Coursing and Animal Folklore

The singular landscape of the Great Plains is habitat for much flora and fauna uniquely suited to its vast horizons, dry climate, and weather extremes. But it is not just specific plants and animals, but also human folkways richly interwoven with them, that are found across the Great Plains and nowhere else. The tradition of coursing for coyotes with sighthounds spans from Wyoming to Nebraska and from Oklahoma to Alberta—anywhere where flat country and sparse trees favor sighthounds' natural advantages of having the eyes to see and the legs to sprint after coyotes on the prowl (Salmon 1999: 47, 195).

In winter months when the sun is bright, the snow is fresh with no crust, and the wind is low so tracks will stay, coyote rigs criss-cross the prairie looking to strike. Their drivers scan for wire knocked clean of snow by fence-line running coyotes who know not to wander in the open lest they get spotted by greyhounds. Hunters scan red grass, which is tall, and flue grass, which is tall too, before it is thrown up for hay. They even scan the wheat stubble where coyotes have learned to hide crouching low like the field mice they hunt there. Rig drivers also head

who greatly assisted in connecting us with coyote hunters. Special thanks is due Dennis Cutchins, Stephanie Eliason, Scott Squire, Steven Bodio, and Sabina Maggliocco for their suggestions.

to the ever-multiplying prairie dog towns—those grassland-destroying fire ants of the plains—whose holes and mounds turn the ankles of cattle but also attract hungry "Mr. Coyoat." The men in the rigs have been passing on the lore of how to interpret prairie dog's titters and chirps that can signal many things—but most importantly an incoming coyote—for many years before biologist Con Slobodchikoff at Northern Arizona University went to press with his analysis claiming that prairie dogs really do communicate with a kind of language (Slobodchikoff 2002: 257-264)

The 15' tall pheasant statue in Gregory, South Dakota.

All of this goes on in states where wildlife management is a vast livelihood-motivated common concern. One of South Dakota's main industries is servicing thousands of tourists paying millions of dollars each year to come to shoot the state bird.2 Huge mesh tent-draped pheasant farms dotting the landscape release thousands of birds each season to significantly augment the "natural" population. Crops are chosen, cutting heights are set, and harvests are timed more with creating pheasant habitat in mind than about anything else. The whole state has become a massive pheasant population maintenance enterprise bringing into focus how dubious the distinction between a "canned" and "natural" hunt can be. Hunting commercialization has been a boon to guides, trappers, taxidermists, and farmers glad to find something more profitable to do with their land. Budweiser advertising reps distribute target-marketed banners to virtually every grocery store in the state welcoming pheasant hunters and linking their sport to drinking Bud.

However, despite its role in reducing pheasants' natural predators, coyote coursing has not been swept up into any of this commercialization. Rigs are homemade by individual fashioners and not bought at any store . There is no formal sighthound hunting association. The American Coyote Hound is not a formal breed and there is little interest in getting it recognized as one.3 It is a hobby by locals for locals ignored by out of state hunter-tourists. And it is virtually unknown outside the rural plains. Many hunters say they hope to stay on the down low for fear of animal rights activists groups misunderstanding the value of what they do and trying to stamp out their tradition. Coyote hunting has remained a quintessentially vernacular enterprise occupying a rung below the prestige forms of animal training and interaction—namely with horses—on the Plains.

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[2] See http://www.pheasantcountry.com and http://www.sdgfp.info/Wildlife/hunting/Pheasant/Index.htm. Accessed 12 July 2006.

[3] The American Kennel Club's *Complete Dog Book* (American Kennel Club 2006) lists the original working purposes of each of its 146 officially recognized breeds but depicts all this canid prehistory as etiological curiosity rather than crucial elements of what makes for "real" breeds to today. Recognized breeds today are almost by definition no longer engaged in the kind of activities that created them. Rather, recognized breed dogs are pedigreed and raised by breeders to certain color, coat, and conformation standards that meet the idealized, yet slowly evolving, aesthetic tastes of dog show judges and have little to do with the demands of ancestral occupations. It is as if the era of dogs for work and hunt has been totally eclipsed by the era of dogs for companionship and show but that a remembrance of the past is necessary to remind us how we got to where we are. In this way the AKC is not unlike literature textbooks that talk about folklore and oral culture as if they only preceded and laid the groundwork for the literate world of today that replaced the orality of the past. Of course both oral folklore and morphologically various working dog breeds are still very much a part of today's world serving the same kinds of functions they did in the past.

These features of a classic avocational folk group also make the tradition an ideal place to explore some of the central issues having to do with the relationship between animals and the study of folklore. Fantastic animal stories have long been a recognized major tale type (Gillespie and Mechling 1987, Dolan 1992). Stith Thompson's venerable The Types of the Folktale posits four major tale-types in the Anglo-American tradition beginning with "Animal Tales" (Thompson 1995 as cited in Brunvand 1998: 232 and Thursby 2006: 55). Coyote coursers also certainly tell personal experience narratives and friend-of-a-friend stories about their dogs' exploits.

Stories about animals are what folklorists have traditionally thought of when considering animals' significance to folklore. Sometimes animals are treated as a principle of interest for a folk group under study to organize itself around. Cattle for cowboys and ranching culture (Stanley and Thatcher 2000) or chickens for cockfighting (Dundes 1994) and foxes and hounds for foxhunting (Hufford 1992, Eliason 2004) are a few examples. In other words, animals have been seen as subject matter for lore or as objects used by occupational and avocational identity networks to self-select around. Animals' existence, forms, and behaviors in and of themselves have not been widely understood as the results of, or as actively contributing to, traditional creative processes.

However, this is exactly what seemed most significant from our fieldwork in South Dakota. The coyote coursing tradition showed that coyote hounds themselves—and to a lesser extent the coyotes—are products of, and participants in, folkloric processes. They are at the same time living folk art fashioned by humans but also active tradition bearers (von Sydow 1965: 231), cultural creators, (Feintuch 2003: 11) and competent performers (Briggs 1988) who in turn shape humans' traditional activities and associations. Such a rethinking of animals in folklore as fully integrated as products and producers situates folklore study to engage the biological sciences as one of the many methods that folklorists have invited under our large interdisciplinary umbrella.

Coyote hounds take a break from their box on a frosty morning.

Mary Hufford hinted at these possibilities in her ethnography of New Jersey foxhunting in Chaseworld but did not attempt to flesh out their potential (Hufford 1992: 12 and Eliason 2004: 132). This ethnography attempts to work through these ideas a little more with evidence from the field, but these are still notions in their infancy. However, it is already clear that, in a very real sense, coyote hounds and their subtypes fall into folklore genres expressed according to traditional knowledge passed on through generations and shaped from natural organic materials just as hand made basket are from reeds and carved saddles are from leather. It is just that with coyote hounds, the organic medium craftsmen work in is still alive. They are not artifacts (Babcock 1992: 204-216, Pocius 2003: 45, 61), but rather biofacts as would be any living things shaped by, and emergent from, traditional human activity as an ongoing part of creative processes.

Dogs have proven the most malleable animals to, literally, be shaped to the needs of a wide variety of traditional human activities (Budiansky 2000). And since dogs are alive, they have creative wills of their own. According to the coyote hunters of the Great Plains, their dogs learn in face-to-face environments from generation to generation passing on the lore of the hunt within small groups of humans and/or other animals (Eliason 2004: 130-134). They are tradition bearers and performers whose vernacular knowledge and creative efforts pass on not only within but also between species. As Ron Boulder suggested, they shape us as much as we shape them. A fact that if, recognized has the potential to put folkloric understandings of animals on the sound footing of what is known about the natural history of animal/human evolutionary interaction.

Todd Fritz's Expressive Biofacts

Todd Fritz points a .22 pistol out his driver's side window and squeezes off three rounds into the shelterbelt—a few acre prairie outpost of shrubs and trees that farmers have planted with state aid for windbreak and wildlife habitat. Todd floors his truck and we float over thwapping door handle high prairie grass like a speedboat on race day at the lake. Todd is racing against the sound of the pistol cracks he hopes have scared coyotes out of the other side of the shelterbelt. Despite expert driving that brings us around in time quick enough to impress even Bill Muncey, we see no coyotes dashing for the horizon on the other side.

Todd Fritz fires his .22 into a shelterbelt.

"They probably weren't there at all," Todd says. "To catch them, you learn where to see them and where to drive. You can see them on the ground a quarter to half mile away—a whole mile if there is snow on the ground. If there is enough grass they will sneak up on you and come right up next to the truck. It is good to watch the ridgeline because you'll see them silhouette. You never know what will happen, which is part of the fun. But most of the guys I know have the best luck trying to scare them out of the shelterbelt with .22s.

"To catch a coyote though, you need to put together a good team. Different dogs have different strengths and some are no good at some things. You'll maybe want an eye dog that can see the coyotes and let you know it's time to run. You'll see ads in The Hound, Hunter, & Fur Trapper newspaper for a ketch dog that will run up and catch the coyote, but a lot of times they are really just up dogs that have good sprint speed but will just run up along the quarry and maybe turn him but won't bite him. A line dog is good for a long endurance run. These are sight hounds that course their prey after all, but that don't mean they can't have nose; so you may want a nose dog from time to time. A tripper is good to have. He'll knock the coyote off his feet so a hold dog can clamp onto him, hold him still, and not let go. A kill dog is . . . well, you get the idea. Some dogs are known for what they go for to kill. You'll want a chest dog or a throat dog. But you sure won't see "ass dog" in the ad, which is what a lot of them are, just useless ass grabbers. You'll want to be free, white, and 21 to get into dog trading. This is very much a buyer beware sort of sport.

"A lot of good people have been doing some very good breeding for a long time though. All these dogs you'll see out here may not be pedigreed but they are bred up for particular traits. 'Bred to throat' or 'bred for distance' the ads will say. Everyone has a theory about how to do it. I don't much like line breeding though. You try to breed an uncle to a niece to kick up a family trait and you'll get either really good or really bad, no in between. I like a little Scots deerhound in the blood; their wiry coat is good for going through barbwire without getting cut up; they also show more endurance and often a little nose. Hybrid vigor seems to work between types and not just species; that's why hardly anybody runs track greyhounds. Some famous dogs you'll hear about are Tip and Delilah from Texas. Everyone in the sand hills of Nebraska, the center of this sport, knows about them (Salmon 1999: 147). My first dog, Black Dick was a descendant of them.

"When hunting, I always like to mix up different dogs with different skills; try out new combinations. They need to be able to work together fanning, herding, and hedging (Salmon 1999: 125) as the case demands. I'll put a mix of young and old dogs in the box. The old ones know what to do and teach the young ones. They pass on how to clear fences, how to take the coyote, and how to recognize and steer clear of deer (if they don't learn that, you'll go to jail; it's against the law to course deer in South Dakota). A coyote'll weave through fence posts but hounds will trail on either side and catch it. They need to learn not to weave after the coyote and get cut up. The coyote will… Hang on. Here we go!"

Coyote dogs spring into action.

Todd sees a big coyote running for a far rise but his dogs stay silent. Amazingly, they don't see it. Todd guns his pickup but there is no point in letting loose the hounds until they see what to chase. We speed after the brown blur roaring up and down hills avoiding invisible sharp drop offs—Todd knows where they are from years of driving this country. We lose sight of the coyote; see it again, lose it again. The hounds never do see the coyote and stay in the box showing Todd's discipline despite his desire to show his guests a good run.

As we turn toward home, Todd muses on what might have been, "The dogs are normally quiet unless they see something. That's how I knew not to let them go. However, if coyotes howl and the hounds don't see it, they will howl and bark back a kind of 'I'm coming to get you!' challenge. All of the coyotes around now are older ones that have been hunted, so they know what to do. You don't usually see this until February. That makes me think the cubs are not surviving—probably the mange that's been around. If we had a little snow, we could see tracks and contrast. We really need two vehicles to drive up on either side of the shelterbelt. One scares out the coyote and the other is set and waiting on the other side. Well fellas, if we don't get our coyote; I'm going to sell all my dogs."

At the end of the day back at Todd's kennel he says, "Sorry guys, come back again and hunt anytime. I hope you catch a coyote tomorrow. If you do, you'll never forget it the rest of your life. I wish you'd seen a chase today; you'd have had something to talk about all the way home. See those pups? Want to take one with you?"

We ask him what keeps him in this sport. Why this and not something else? What is the draw? "I love the sound of doors opening, clattering, clanging. I love the jumping, leaping, baying right out of the box. But mostly I am in it for the movement of the dogs. There is nothing more graceful to watch than when they run across the prairie full tilt. I'd follow them anywhere they go."

Implications and Directions

Stephen Budiansky, former editor of Nature magazine suggests in his The Covenant of the Wild: Why Animals Choose Domestication that the etiological legends explaining domestication common in many societies — where man goes into the wild, capturers a wolf cub and tames it—give far too much credit to conscious human action in the long evolutionary processes of domestication (Budiansky 1999:19-21). Rather, he contends that animals such as dogs, cows, cats, and chickens—all of whom are generalists specializing in exploiting the new opportunities of just the sort of changing habitats humans tend to create as they enter a particular area—have

infiltrated themselves into human society as a highly successful survival strategy. Budiansky points to the contemporary numerical success of domestic animals compared to their much dwindled wild counterparts (Budiansky 2000: 6), as well as the extraordinary lengths that human pastoralists like the Maasai will take to follow and protect cattle on what are more or less the herd's natural cyclical migration paths, as evidence that animals initiated, have mostly directed, and perhaps have benefited the most from the "bargain" of inter-species association that is domestication. Ray Coppinger a dog behavior expert at Hampshire College explains, "It was natural selection—the dogs did it, not people" (Wade 2006: 112). This "they are using us" principle seems to have driven plant domestication as well. Flora from apple trees to marijuana plants have engaged in fierce competition to offer humans attractive traits that will ensure we, literally, cultivate their survival (Pollan 2002).

Back at Todd's kennel with "Pinhead" (foreground) who doesn't hunt.

Despite the pride (or horror in some quarters) humans take in imagining ourselves the dominant species, any biologist from Mars who cared to come observe Earthly ecology might regard much animal/human interaction as parasitical on the order of invasive newly-hatched cuckoo birds expelling the eggs of rival natural siblings from their own nest (Budiansky 2000: 6-7). What might such a Martian observer make of the fact that numbering 120,000, there are far more pet dogs than human children in San Francisco and that an estimated 80% of dogs that come to "doggy day care" centers live in houses without children (Budiansky 2000: 7, Lovgren 2006, Sappenfield 2002)? The Martian observer might have an interesting take on which species is engaged in the most successful evolutionary strategy and who is exploiting whom for their own reproductive success.

By any economic or physical health measures, the benefits to humans of domestication have been dubious at best (Budiansky 2000:1), as any cat owner who racks up hundreds of dollars of veterinary and food bills a year, or any tourist watching thousands of cattle range unmolested at will downtown in any Indian city, or any vegetarian activist or college nutrition textbook reflecting on the relative calories per acre efficiency of any protein rich plant crop vs. any livestock species will tell you (Hamilton et. al. 1988: 561-567). (A given parcel of land devoted to raising soybeans will produce more calories per acre than the same land devoted to feeding chickens; and chickens are more efficient than pigs; and pigs more than cattle.) Accounting for such costs, Jared Diamond only half jokingly calls domestication "the worst mistake in the history of the human race" (Diamond 1987: 64-66).

The strongest case for humans' material benefit from domestication can be found in the synergistic effects of combining the hunting strengths of dogs (sprint speed, sense of smell, strong jaws) with the those of humans (long distance endurance as well as higher capacity for complex organization , quarry spoor tracking, and behavior pattern recognition) that make it more likely that both humans and dogs will eat after any hunting foray they make together than if they hunted in species-segregated hunting parties (Budiansky 1999: 60) . One does not to need to turn to "man captures and tames animal" legends to imagine human and dog hunting parties co-mingling their efforts in a mix of cooperation and competition for most of our co-evolutionary history. It is quite possible that dogs began exploiting the benefits of cooperation long before we did. (Nicholas Wade assembles a wide variety of evidence suggesting hominid/canid cooperative interaction goes back to the earliest spread of the ancestral population of behaviorally modern humans into Eurasia and that guard dogs probably fostered the momentous transition from foraging to settled societies [Wade 2006: 110-113]).

These synergistic benefits made more evolutionary sense in the Pleistocene than they do today; yet it is striking how well so many forms of hunting and non-hunting animal/human interaction have endured long after the initial benefits ceased to exist.

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So what is it about the myriad ways we work, play, and live with animals that that makes "domestication" so common in the human experience despite the seemingly parasitic drag such animals place on us? Todd Fritz talks about "the movement of the dogs." And bachelor cowboy Guy Marts explains,

Guy Martz at home with his dogs.

"There is no bounty for pelts anymore. I don't care though. It's more or less a hobby. Just a matter of what thrill the dogs get out of it. They get more thrill than I do, I like to see their excitement. That is why I do it."

Guy's observation reflects Budainsky's contention that dogs are master adaptors learning the wide variety of behaviors humans find attractive or useful and doing what ever it takes to get us to continue to feed, shelter, and allow them to reproduce, be that making "puppy dog eyes" under the dinner table, standing guard over our property, or running after coyotes (Budiansky 2000: 26).

I would suggest that Todd's and Guy's explanations demonstrate that it is because of the very things folklorists have long known about human aesthetic desires—coupled with animals' ability to adapt (or allow themselves to be shaped to their own advantage) in ways that meet human universal needs—that have allowed domestication to thrive. Our relations with animals fill our need for creative expression, aesthetic appreciation, and meaningful cooperative activities in communities of like-minded individuals—be they people or animals or both. Perhaps, rather than as exploitation, one direction or the other, domestication is best understood as a mutually beneficial exchange between two species both capable of exchanging surplus activity the other finds advantageous.

Coyote hounds running for exercise.

It is perhaps because folklore is universal and some animals are parts and products of folkloric processes that our relationships endure. Coyote hounds in their many varieties, as Todd Fritz explains, are genres and subgenres of human expressive activity. W. H. Salmon, the foremost writer from within the sport explains, "What could be more creative to the dog man than developing a new breed of your own?" (Salmon 1999: 185) Todd's observations and Salmon's writing show that close attention is paid to evaluating and shaping a myriad of dog traits whose aesthetic and functional natures are intertwined in the same ways that other recognized

folk arts are (Salmon 1999: 194, Glassie 1989:86-88). But the human role only goes so far. The folk art of coyote rigs and traditional knowledge of hunting is to a degree the result of human agency. However, they are the dogs' folk art creations too, as much if not more, than ours.

Coyote hounds in their box.

While these speculations do not begin to provide a much-needed examination into the evolutionary roots of folkloric expression and artistic appreciation itself, 4 aesthetics, excitement, love, and the sense of participation in something connected to the ways of the past, rhythms of nature, and the lives of other living beings may be why humans and animals have partnered in so many diverse ways throughout history.

Such an understanding offers the opportunity for the opening up of whole new vistas for ethnozoology—the study of cultural relationships between humans and animals. Ethnobotany, as folklore's sister field in the botanical sciences, has thrived at least in part because the commercial pharmaceutical benefits that have sprung from it (Davis 1997; Schultes and von Reis 1995; Minnis 2000). Enthozoology, on the other hand, is considerably less well developed. But an understanding of animals as forms of, and contributors to, folklore has the potential for folklorists to greatly contribute to its vitalization.

The idea of animal culture is not entirely new, however. In recent years primatologists have turned to understandings from cultural anthropology in the emerging field of animal culture studies (ironically, even as anthropologists have moved away from earlier notions of culture and cultures.)5 Such work has chipped away at the list of things once thought to distinguish humans from animals—namely, material culture, tool use (Goodall 1986), tradition, custom, language (Hillix and Rumbaugh 2003), and kinship understandings, psychological states, and emotions (Ridley 1993: 312, 326; Masson and McCarthy 1996). This list shows remarkable overlap with the very purview folklorists have regarded as our own specialty in human behavior. Folklore studies potentially have a lot to learn from looking into such work while reconsidering the place of animals in folklore studies.

However, one of the most significant books on the topic of animal culture makes a distinction which may well be useful for certain primatological concerns, but seems unfortunate considering growing appreciation of hybridity and syncretism's role at the core of creative cultural processes (Kapchan and Strong 1999).

William McGrew in The Cultured Chimpanzee explains how the famous images of frosty-haired Japanese snow monkeys sitting serenely in steamy hot springs are an example not of instinctual activity, but of learned animal behavior passed on within small groups. Yet it is not the sort of practice McGrew thinks primatologists interested in ape culture should be investigating, because snow monkeys apparently have only recently learned to

[4] For an inquiry into various theories as to the evolutionary basis for human aesthetic appreciation see Brian Boyd, "Evolutionary Theories of Art," in Jonathan Gottschall and David Sloan Wilson, *The Literary Animal: Evolution and the Nature of Narrative*. Evanston: Northwestern University Press, 2005.

[5] Today, to talk of a group having a "culture" is understood as an abstraction of the beliefs, behaviors, and attitudes individuals have learned from others, some of which s/he shares with some neighbors and some of which s/he doesn't. Rather than imagining sealed and self-contained societies uncorrupted by the outside, anthropologists are much more likely to see networks and nodes of influence that go beyond the local to regional, national, and even global webs in symbolic interaction. The key players in the contemporary field of social cultural anthropology have all written in this vein. See for example: (Appadurai, 2001), (Clifford 2001), (Marcus, 1995), (Mintz 1986, 1997), and (Taussig 1996).

sit in hot springs from watching Japanese human tourists engage in this traditional recreational practice. Rather, he suggests that students of animal culture should seek out those purely indigenous phenomena unspoiled by human interaction (McGrew 2004: 3).

Such contentions continue in a tradition of a kind of essentiality and original state nostalgia that folklorists have increasingly been learning to eschew (Turner 1982: 77 and Bendix 1997). What some biologists see as cultural contamination to discount and use to define the boundaries of appropriate interests is exactly the kind of interspecies influence that is crucial to understanding the interconnected nature of animal and human cultural expression.

However, the mere fact that biologists have felt the need to turn to cultural anthropology and ideas of culture (outdated though they may be) to better understand their subject matter demonstrates that folklorists might ought to reciprocate to properly appreciate the role of animals in folklore studies. The biological sciences—whose vibrancy and explanatory power are particularly strong right now—have not been mined as much as cultural anthropology, history, and literature studies for potential insight into the work of folklorists. The work of the land rockets of the Great Plains and their human followers who together are "keepers of an ancient contract" (Budiansky 1999: 17)) are just one example of many nexi of human, animal, and environment interaction ripe for folkloric study informed by the insights of the biological sciences.

A wire-haired coyote hound and the results of a good day.

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- ✓ Note, 3-8 thousands of characters without picture.

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115407, Russia, Moscow, P.O. Box 12 Kuzina Marina Georgievna.
Old address remains valid until end of the current calendar year.

This is the time to pay membership fees, $16.00 or 15 Euro, for 2008. Send money to:

- ✓ 115407, Russia, Moscow, P. O. Box 12 Kuzina Marina Georgievna

OR

- ✓ Translation into the currency account:

Bank name: «GUTA BANK»
Adress: 5, Dolgorukovskaya str., Moscow, 103006, Russia
Branch: Office «Tverskoy»
SWIFT: CBGU RU MM
Beneficiary's account № 42301978004000000240
Foreign currencies send to:
Vladimir Beregovoy 1507 Mountain Valley Road, Buchanan, VA 24066, USA
Donations are welcomed.
Payment details: private transfer for current expenses

All questions, suggestions and comments will be accepted with gratitude. E-mail them or send them as snail mail to: Kuzina Marina G. mail box 12, Moscow, 115407 RUSSIA
