

## Sinhala Dog in Antiquity: An Evidence for Selection of Dog Genome

C.N.S.Gamage

Ministry of Livestock and Rural Community Development,

# 45, St Michael's Rd, Col. 03

niroshgama@gmail.com

### Introduction

The size, shape, and behavior of the modern domesticated dog have been sculpted by selection for at least 14,000 years. (Joshua et.al; 2010). The genetic substrates of selective breeding, however, mainly depend on the use for rearing. The modern domesticated dog (*Canis lupus familiaris*) represents one of the longest-running experiments in human history. This experiment, still actively being conducted, has resulted in over 400 genetically distinct breeds that harbor considerable variation in behavioral, physiological, and morphological phenotypes. Shearin and Ostrander (2010) suggest that there is more variation among breeds of dogs than among other domesticated animals. However, most domesticated animals are livestock, such as pigs, cattle, sheep and goats, and these animals have been selected for specific economic attributes such as meat, milk or wool production. As a result, selection in these species is constrained by increasing or conserving these economic functions. On the other hand, different dog breeds have been strongly differentially selected for many characteristics such as various working traits (hunting birds, hunting mammals and guarding livestock) or other traits such as racing, for companionship, or even because of unique morphological traits. In fact, extreme selection in dog breeds in ancient Sri Lanka has become an obvious in studying of morphological

features of the dogs depicted on frescoes and stone carvings; with focus on appearance resulting in mastiff type and a hound type. The spectacular phenotypic diversity exhibited among breeds is thought to have originated much more recently, largely through intense selection and strict breeding practices to perpetuate desired characteristics. The extensive phenotypic diversity that exists between dog breeds has long been recognized as a unique portal into the genetic architecture of phenotypes.

The skeletal remains of dogs from Nilgala cave and from Bellanbandi Palassa, dating from the Mesolithic era, about 4500 BC, suggest that Balangoda Man may have kept domestic dogs for driving game. It has been suggested that these could all derive from a common domestic stock. (Deraniyagala, 1992). Hunting dogs and dogs that were associated with household had been cited quite a lot of times in *Mahavamsa*. (Geiger; 1839., 7:9,7:10, 28: 9,28:41,36:44,54:32,60:74).

### Methodology

There are voluminous literal evidences for the existing of dog across the Sri Lankan history which clues that how much it closed to the local inhabitants. They further suggest that there were two distinct types of breeds. Such evidences support to determine the existence of dog

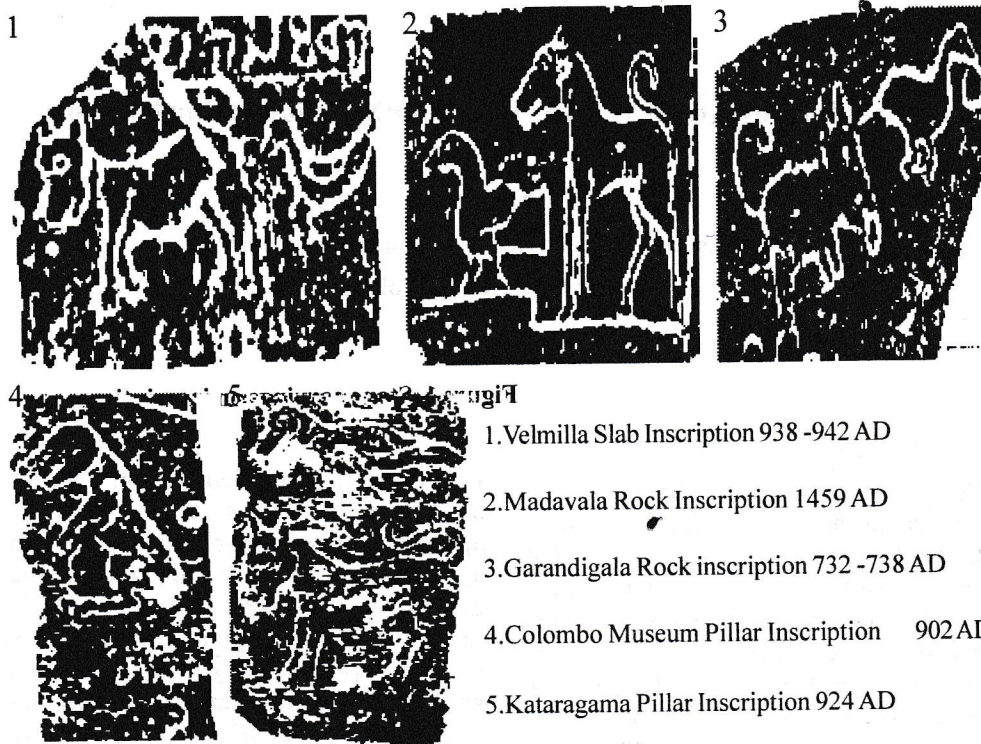


Figure 1  
 1. Velmilla Slab Inscription 938 -942 AD  
 2. Madavala Rock Inscription 1459 AD  
 3. Garandigala Rock inscription 732 -738 AD  
 4. Colombo Museum Pillar Inscription 902 AD  
 5. Kataragama Pillar Inscription 924 AD

as a companion animal and as an animal of game. Re- construction of phenotypic characters of two breeds of dogs is highly supported by the line sketches depicted on stone carvings and frescoes. Therefore literal evidences and line sketches have been exclusively utilized in constructing of characteristic features of two breeds of dogs.

**Discussion**

Two distinct types of dogs were described from the depicted on frescoes and stone carvings with the characteristics of short hair with erected ears and cock tails. Most of the stone carvings bear a sketch of a dog with short muzzle, thick and deep, heavy head with erected ears, rather low in the legs, stoutly built and slopes from the shoulders then rises to the hips resembles a mastiff. The other one was a hound, thought to be used for hunting and fighting having comparatively thin body and a muzzle with erect ears. The



Figure 2. Frescoes - Deva Angam cloth of Maha Devale, Hanguranketha (16<sup>th</sup> Century)

mastiffs were very common and domestically abundant while hounds were bred for amusement hunting. Evidences suggest that throughout a considerable period of time inhabitants of Sri Lanka had maintained two distinct breeds of dogs which clues that it was an artificial selection of genes that of desire.



**References**

Aquirre GD, Ray K, Acland GM. 1999. Overview of the International Workshop on Canine Genetics. *J Heredity* 90 (1): 1-2.

Awise JC. 1989. A Role for Molecular Genetics in the Recognition and Conservation of Endangered Species. *Trends in Ecology and Evolution* 4: 279-281.

Clark KM. 1995. The Later Prehistoric and Protohistoric Dog: The Emergence of Canine Diversity. *Archaeozoological* 7: 9-32.

Deraniyagala, P.E.P.,(1959). Some Sinhala Combative, Field and Aquatic Sports and Games. National museums, Sri Lanka.

Deraniyagala, Siran (1992). The Prehistory of Sri Lanka. Colombo: Department of Archaeological Survey.

Clutton-Brock J. 1995. Origins of the Dog: Domestication and Early History. In: J.Serpell, (editor.). *The Domestic Dog, Its' Evolution, Behavior and Interactions with People*. Cambridge: Cambridge University Press. pp. 7-20.

*Epigraphia Zeylanica*.