THE EVOLUTION OF THE WILDCAT TO THE DOMESTICATED CAT

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**INTRODUCTION**

Evolution was first introduced by Charles Darwin in 1859. To be honest evolution has many definitions the one that we are focusing here is the process by which organisms change over time as a result of changes in their physical or behavioral traits, or even their environment around them. They make these changes in order to adapt to their surroundings, make sure they survive and reproduce. Change is happening every day, everywhere around us. The most common phrase I have heard with the word evolution is that “Technology is evolving”. Things are changes to better suit their needs and adapt on what is going on around them. For this paper I wanted to catch upon the Wildcat (Felis silvestris) and the domestic cat. I am going to talk about how the wildcat evolved into the domestic cat and compare their characteristics. But first I am going to compare the three most known types of wildcat, the European Wildcat (F.s. silvestris), the African Wildcat (F.s. lybica) and the Asian wildcat (F.s. ornata). Many scientists believe that all cats and wildcats descended from just one cat species *Felis silvestris,* the known wildcat, but cannot be certain about it.

“According to earlier morphological studies the three wildcat groups possess external characteristics that are fairly distinct from each other and ubiquitous within each group” (Pocock 1951, Roberts 1951, Haltenorth 1953, Heptner and Sludaskii 1972).

When consulting other papers about the domestication of cats I came through some things that are so simple and yet even though I am a cat owner I never thought. In the United States a third of the households owns a feline.

Let’s talk a little bit about the domestication of cats. I think most of us have the idea of cats being domesticated by ancient Egyptians around 4,000 years ago. I think is fair to think that, this is what movies show us, this is what books tell us, but in reality genetic and archaeological discoveries indicated that cat domestication probably started around 10,000 years ago most likely in the middle East. When scientists tried to figure out exactly when were cats domesticated they came upon a buried adult with an assortment of items accompanied the body and next to it an eight-month old cat. That happened in Cyprus, where they knew that cats were not native there, so they knew that people must have brought them over by a boat. It appeared that cats were being tamed just as humankind was establishing the first settlements in a part of the Middle East at Fertile Crescent. As agriculture was spreading around the world so did the domestication of cats.

Let’s bring up a question. Why were cats domesticated? Other animals had something to offer, their milk, meat, wool or labor. But cats really don’t contribute to any of the above. Felines in general were never ideal for domestication. That being said humans probably chose to domesticate other wild animals for tasks, and food, but cats chose to live around humans to help themselves.

The evolution from the wildcat to the domesticated cat came in stages. Felines are great hunters and are very good at surviving on their own. Probably the first domesticated cats had to survive on their own, even though they were surrounding themselves with humans. That meant that their hunting and scavenging skills remained acute. To this day, cats don’t need us to survive, they are explorers they like the outdoors and they are great hunters. Cat owners have probably observed their cats playing-attacking an object, their body preparation of the attack is like other felines. Humans and cats found a common ground when it came to mice and snakes. Cats loved and love to eat them and people didn’t and don’t want them around.

Evidence of cats being domesticated came from a statue from Israel that is dates around 3700 years ago. This indicates that cats were very common amongst humans for them to specifically create statues of them. However, our first evidence of full domestication comes from Egypt around 3,500 years ago. At this time our evidence is undeniable, that cats at this period had been fully domesticates. Egyptians made drawings of cats with collars, eating from plates and routines used today.

About 2,000 years ago domestic cats started spreading all over the world, reaching China, arriving in India and other Asian countries. At the moment these places didn’t have an established native wildcat that these cats could breed. So, the cats that settled in the Far East started evolving, achieving specific mutations, due genetic drift. Genetic drift is a change in the frequency of an allele within a population over time and usually is random. These mutation led to breeds like the Korat, the Siamese and the Birman.

Studies have suggested that the European wildcat, the African wildcat and the domestic cat are phylogenetically very close. That suggests that the European and the African wildcat probably diverged from each.

**MATERIALS AND METHODS**

To gather data I started researching papers that were either comparing the three different types of wildcat or the wildcat with the domestic cat. I was able to gather information as to what their environment is, their external characteristics, where they live, but I was not able to find many numbers. The data that I gathered are comparison data of some internal structures of their bodies, craniological structures, and body sizes.

The first paper introduced a study that was conducted in Germany and took samples of 58 speciments. In more detail they tested 40 cranial, eight skeletal, ITL and body weight.

Figure. 1 Shows the characters according to their coefficient of variation, comparing the domestic cat with the wildcat. This figure was made in R.

“The coefficient of variation in this paper was calculated as CV = (SD/M) x 100% expressing the standard deviation (SD) as a percentage of the mean (M). According to Mayr et al. (1953) CV is particularly useful when comparable samples of the same species from different localities are investigated.

In most of the papers reviewed, many pictures were shown for comparison between wildcats and domestic cats. In most pictures, the gender of each was mentioned, to notice the big differences between females and males of each species but also the similarities of for example male wildcats to male domestic cats.

Not included in this data were also 20 pelage measurements which included: extent of dorsal line, shape of tail tip, distinctness of tail bands, broken stripes on flanks and hindquarters, spots on flanks and hindquarters, stripes on nape and stripes on shoulder. These characteristics are essential for wildcat identification.