

THE EVOLUTION OF THE CAT

I. Introduction

- Cat-like animals came into existence about 65 million years ago.
- The oldest fossils showing a similarity to modern cats date back to 20 million years ago.
- Cats were the last traditional animals to be domesticated. The oldest evidence is from 4500 BC in Egypt.
- Cats are near the top of the evolutionary pyramid due to: Keen sight, hearing, & smell, Strong legs, Sharp claws & teeth, High reasoning ability
- Because cats are such efficient hunters, they can hunt alone. Only the lion hunts in a pack.

II. The Evolutionary Tree

A. Miacids

- Epoch: Paleocene – 65 million years ago
- The first ancestor of the cat.
- They had short legs & long bodies
- They were weasel to wolf sized & lived in forests.
- They had carnassial teeth.
- They also had sharp canine teeth

B. Aeluroidea & Arctoidea

- Epoch: Eocene to Oligocene - 53-34 million years ago
- Miacids split into 2 branches: Aeluroidea, also known as Feloidea and Arctoidea, also known as Canoidea
- Aeluroidea evolved into 3 groups: Dinictis, Hyaenids, Viverrids
- Arctoidea evolved into 4 groups: Canids, Mustelids, Procyonids, Ursinids

C. Dinictis

- Epoch: Eocene – 53 million years ago
- Dinictis had longer legs & tail, & better teeth for stabbing.
- Dinictis developed into 2 different branches: Nimravidae (Paleofelids), Felidae (Neofelids)

D. Nimravidae & Felidae

- Nimravidae was the first saber toothed cat
- Was not as efficient or intelligent as Felidae & died out after 30 million years.
- Felidae developed in 2 stages: Proaelurus – Oligocene age, Pseudaelurus (Pseudaelurus) – Miocene age

E. Pseudaelurus

- Epoch: Miocene – 23 million years ago
- Evolved into 4 groups: Smilodon, Acinonyx, Panthera, Felis
- The direct ancestor of the modern cat
- Had a flattish skull & very good hearing
- Walked almost flat-footed

F. Smilodon

- Smilodon appeared 12 million years ago & survived for about 2 million years, then died out.

G. Acinonyx

- Acinonyx are the cheetahs.
- Have an ossified hyoid bone so they can't roar.
- Have retractable claws
- Found only in the Old World

H. Panthera

- Large cats found in both the Old & New Worlds.
- Includes lions, tigers, leopards, & jaguars
- Have a movable hyoid bone so they can roar.

I. Felis

- The largest of the cat families
- Has an ossified hyoid bone
- Better-known family branches include:
 - Felis catus: cougar, lynx, ocelot, bobcat, margay, serval, caracal
 - Felis sylvestris: Scottish wildcat, Spanish wildcat, Indian desert wildcat

III. Early Domestication

A. Felis Sylvestris Libyca

- An ancient Egyptian/African wildcat
- The first branch of cat to become domesticated

B. Domestication

- Cats were first domesticated about 8,000 years ago (around 4500 BC)
- The earliest remains were found in Ancient Egypt.
- Cats were first used to hunt river rats in granaries.

IV. Ancient Egypt

- Cats were considered sacred.
- In The Book of the Dead from 3500 BC, the cat was the symbol for the sun god Osiris or Re.
- The goddess Bast assumed the shape of a cat & became the protector of cats.
- Cats were not allowed to be exported.
- Killing a cat was a crime punishable by death.
- Cats were usually embalmed & buried in special cemeteries.

V. The Cat in Europe

- The Phoenicians & Greeks brought cats to Europe in around 2,000 BC.
- They were used to control rats on ships.
- Cats were protected by the Church until the 10th century.
- During the Middle Ages, cats lost favor & were blamed for anything evil.
- They were often burned.
- Cats were connected to witchcraft into the 1700's.
- Cat fur was used for clothing.
- People ate cats during times of famine.
- During the 17th century, cats began to be part of the family household.

VI. Cats in the Orient

A. China

- In China, the cat was the symbol for good fortune, peace & beauty.
- Buddhists admired the cat's meditative powers.

B. Japan

- Cats arrived in Japan in about 600 A.D.
- The Maneki Neko (beckoning cat) is a common lucky charm in Japan.
- Cats are seen as beings of rare beauty.

VII. The First Cat Shows

A. England

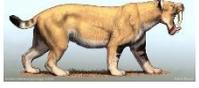
- In the Victorian Era (the 19th century) people became interested in developing different breeds of cats.
- The first cat show was held in London, England, on July 13, 1871.
- It was held at the Crystal Palace.

- There were 160 cats shown.

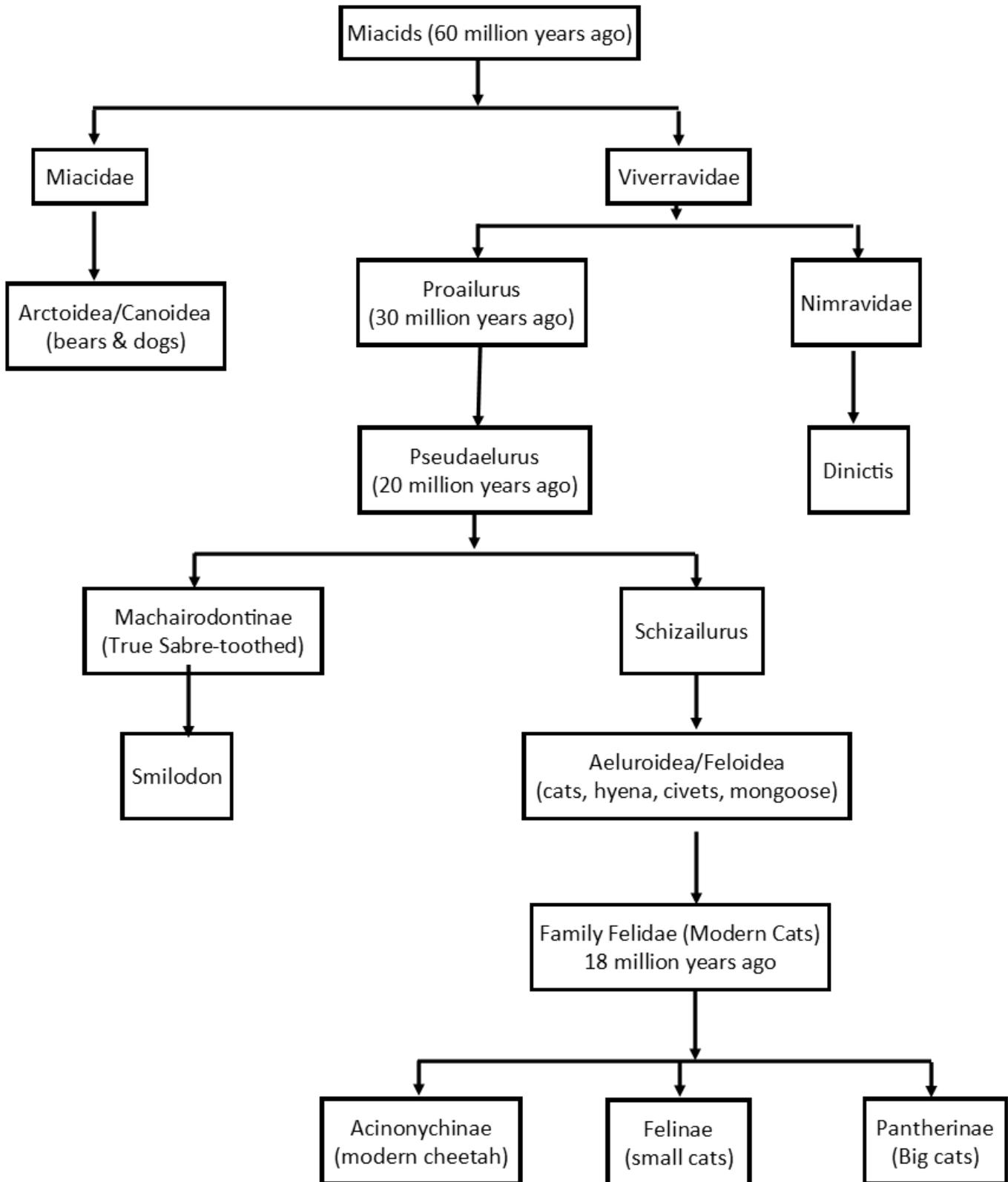
B. America

- The first American show was held in Madison Square Garden, New York City in 1895.
- The first registry for cats in America, the Cat Fancier's Association (CFA) was formed in 1904.

THE AGE OF MAMMALS, THE CENOZOIC

1. Paleocene ~ 65-56 Million Years Ago		
<p>The comet or meteor hit and the dinosaurs, except the birds, were wiped out roughly 65 million years ago. This left the relatively tiny mammals to seize the larger land niches. The mammals rapidly evolved larger sizes.</p>	<u>Miacids</u>¹	
	2. Eocene ~ 56-34 Million Years Ago	
<p>Something made the earth much hotter at the transition between the Paleocene & Eocene. Many species went extinct as a result. From the Eocene through the Pleistocene, the world generally became colder.</p> <p>In the Eocene the mammals were somewhat smaller than before or after the Eocene. The mammals were on average only 60 percent of the size of the late Paleocene mammals. The earliest fossils of most of the modern mammalian orders are found in the Eocene.</p>	Arctoidea	
	<u>Dinictis</u>³	
3. Oligocene ~34-23 Million Years Ago		
<p>The Oligocene began with an extinction event. The earth may have been hit by a large object. As the earth became cooler and dryer the mammals became very large.</p> <p>This period of relatively unsophisticated giants seems to be similar to the Jurassic for the age of dinosaurs, which was also an age of unsophisticated giants.</p>	Aeluroidea ²	
	Nimravidae	
	Proaelurus ⁴ (First Cat)	
4. Miocene ~23-5.3 Million Years Ago		
<p>The animals in the Miocene were quite different from the Oligocene but quite similar to those we have today. The climate was cooling but still warmer than ours. Much of the Miocene was as warm as the earlier Oligocene.</p>	Pseodoaelurus ⁵	
	Panthera	
5. Pliocene ~5.3-1.8 Million Years Ago		
<p>The climate is about the same as ours, and the animals are also quite similar. For the animals think of hairy version of today's Africa.</p>	Acinonyx	
6. Pleistocene ~1.8 Million Years Ago To 11 Thousand Years Ago		
<p>The Pleistocene has commonly been called the ice age. Glaciers advanced and it was very cold most of the time. But there were also warmer interglacial periods, like the one we are in now.</p>	Smilodon	
7. Holocene ~Last 11 thousand Years		
<p>The Holocene is the current interglacial period. Perhaps because of man, this interglacial period has lasted longer than previous ones. Agriculture developed fairly early in the Holocene, and for about the last half of the Holocene there have been human civilizations and written language.</p>	Felis ⁶	

The Evolution of the Modern Cat



This is the most current version of the cat evolutionary tree that I could find. Notice that Dinictis is not an ancestor in this version.