

Order Perissodactyla - odd toed ungulates.

Generally agreed to be a monophyletic order.

Morphological evidence does seem to indicate as much.

Not a large order - only 16 species.

Diversity has declined considerably since the Eocene/Oligocene.

Due to climate change? Competition from artiodactyls?

Some groups have a well known fossil history:

Horses are often used to illustrate evolution since their history is well known.

(Strangely, evolved in North America, then disappeared until re-introduced by humans).

Some fossil species are well known (things like brontotheres/titanotheres).

Some major adaptations of this group include:

- enhanced running ability (in some).

 - text has a whole section describing the adaptations to running including such things as:

 - lengthening of limbs.

 - respiratory system adaptations (lungs breathe in rhythm with stride).

 - flexibility of spine.

 - muscle specializations.

 - (see text if you're interested).

- herbivory.

 - most have enlarged cecum to deal with vegetation.

 - text mentions that artiodactyls do better when food quality is low, perissodactyls do better when food quality is high.

 - perissodactyls digestive system is better at absorbing things like proteins.

Three families:

Family Equidae - horses.

“Wild” populations are distributed in Africa and Asia. (In north America horse was introduced).

Eight species (according to text), all the same genus.

However, this includes the “quagga”, which is almost certainly extinct.

(Genetic analysis wants to lump this back in with the plains zebra).

(Wikipedia actually lists the plains zebra as *E. quagga* instead of *E. burchelli*).

Regardless, the quagga was quite distinctive.

Three species of zebra (told apart by the pattern and density of stripes (easier than it sounds)).

Some controversy as to exactly how many species there are.

Three species of “donkey” (ass, onager, kiang).

Donkey (*E. africanus* or *E. asinus*, depending on who you ask) has been domesticated for about 5,000 years.

A “cheaper” horse; used for many similar things as the horse.

Even today heavily used in countries that are developing.

Horse (of course...).

Apparently someone renamed this species to *E. ferus* instead of *E. caballus*??

The only “wild” horse left is Przewalski's horse (Front royal has a few).

From Mongolian steppes.

Widely domesticated. Until about 100 years ago one of the main means of transportation.

But also used in war, as a draft animal, for companionship, racing, etc.

May have been domesticated as early as 12,000 years ago, but probably a bit more recent than that.

Family Tapiridae

Four species - Three New World and one from Malaysia.

Very distinctive appearance with a small flexible “trunk”.

Live in forested areas, and swim well. Generally solitary.

Teeth are not as resistant to abrasion.

Capable runners, though obviously not as fast as horses, etc.

Also swim well which let's them evade predators.

All are endangered due to bush meat hunting and deforestation.

Family Rhinocerotidae

One of the most recognizable animals anywhere!

Five species.

Found in all kinds of habitats from steppes to forest.

Smaller Sumatran rhino lives in forests and is more vocal than others.

Few predators except humans (young are occasionally taken).

Social groupings also vary a lot:

Some (black rhino) are solitary, others (white rhino) occur in family groups or even larger groups.

All are endangered due to “traditional” medicine (and dagger handles).

Black rhinoceros and Asian rhinoceros are in worst shape, though all are affected.

Estimates are about 3,000 black rhinos and 2,600 Asian rhinos are all that's left.

(Figures vary a bit depending on which source you consult, but they're fairly unanimous in indicating rhinos are in serious trouble).