Grey Short-tailed Opossum

Monodelphis domestica

Fact Sheet

Status: Common

Distribution: *M. domestica* is one of 63 species in the family Didelphidae found exclusively in the Americas. Monodelphids are endemic to eastern and central Brazil, Bolivia, and Paraguay, but can also be found in Chile, Argentina.

Habitat: *M. domestica* isn't very well adapted for arboreal life and typically inhabits rocky areas. Despite this fact, *M. domestica* is a very good climber.

Diet: Short-tailed opossums are very opportunistic and will eat insects, fruit, small mammals and even carrion. Their primary diet is insects, small rodents and fruit. They will also eat bird eggs, frogs, small lizards, scorpions, small snakes, spiders and worms.

Length: 110-200 mm

Weight: males weigh 105-125g; females weigh 75-90g

Reproduction: One of the defining features of a marsupial is their pouch, but *M. domestica* is actually pouchless. The males induce estrus in the females, which is approximately a 28-day cycle. Short-tailed opossums will breed throughout the year in their tropical habitats. In captivity these reproductive cycles are often carefully controlled. Typically the females will have 8-14 young. The young are born only partially developed, and make their way to their mother’s abdomen, where they secure themselves by holding on to her teats. When they are about 45 days old they will crawl up onto her back.

General Description: This species of opossum are small, having a tail about half as long as the body, and being somewhat rat-like in appearance. They are grayish brown in color and the hairless tail is fully prehensile. As mentioned above, this species of marsupial lacks a pouch and have 8-14 nipples. They have pointed muzzles. The ears are large and thin. They have claws on all 5 of their toes, except on the first digit of the hind foot (hallux) which is opposable.

Behavior: They are nocturnal so will be most active at night, although if they are awake they will be social during the day.

Did you know? They are easily handled if they are tamed from a young age, but should be kept as solitary pets because of their tendency to fight with other opossums.

Where can you find them? As pets, in zoos and in the wild.
Comparative Mammalian Anatomy

Natural History of the Grey Short-Tailed Opossum (Monodelphis domestica)

Authors: Sarah Ogburn and Linda Brogdon

Classification:
Kingdom: Animalia
Phylum: Chordata
Class: Mammalia
Subclass: Theria
Infraclass: Metatheria
Suborder: Polyprotodontia
Superfamily: Didelphoidae
Family: Didelphidae
Subfamily: Didelphinae
Genus: Monodelphis
Species: M. domestica

Common name: Grey short-tailed opossum

Evolution and Phylogeny:

Monodelphis is a living marsupial native to South America. Living marsupials are the surviving branch of metatherian mammals. Metatheria is an infraclass within the animal class of Mammalia. It includes marsupials and their closest relatives. The earliest fossil metatherian, Sinodelphys szalayi, dates to 125 million years old and was found in the Liaoning Province of northeast China [1]. Its morphology suggests that it was an arboreal animal. An early eutherian mammal, Eomaia, was found in the same geologic layer as Sinodelphys. Eutheria is also an infraclass within the class Mammalia, including placental mammals and their closest ancestors—which are known only from the fossil record. The presence of these two early mammals indicates that the split between Eutheria and Metatheria must have occurred before 125 million years ago. Other data points to a split after 144 million years ago, at the beginning of the Cretaceous [2]. Other basal metatherians include Holoclemensia and Deltatheridium[1].

All living marsupials are restricted to Australia and South America, with the exception of Didelphis virginiana, which immigrated to North America in the Pleistocene. This distribution represents a dramatic switch, as many early fossil metatherians from the Cretaceous are found only in Eurasia and North America[1]. Scientists are uncertain exactly when or why this switch occurred, but it is believed that metatherians moved into South America sometime in the
late Cretaceous or early Paleocene, and reached Australia via what is now Antarctica[3].

Other scientists contend that metatherians and eutherians arose in the southern supercontinent of Gondwana, along with monotremes, or that eutherians arose in North America and metatherians and montremes in Gondwana. More fossil evidence would help elucidate the problem of metatherian origins [4].

Protodidelphids evolved from primitive ameridelphians in the Paleocene. Didelphids appear in the middle Miocene in South America and did not migrate to North America until the Plio-Pleistocene. The fossil record of the didelphids is, unfortunately, very poor [3].

Modern opossums have retained many primitive metatherian characteristics, and have not evolved much since the original didelphids. It has been calculated that the rate of karyotypic evolution (as seen in number of changes per million years) in metatherians is far less than that of placental mammals. Estimates are that marsupials have had .13 karyonumber changes per million years versus the .51 seen in placentals [5]. Selective pressures have been few due to the extremely generalist nature of their diet and locomotion. Marsupials are also subject to specific evolutionary constraints due to their unique reproductive system. The breast and shoulder regions of marsupials are particularly constrained because the extremely underdeveloped young must climb from the birth canal to their mother's pouch [3].

Monodelphids' closest relatives are in the genus *Marmosa*, which includes mouse opossums.