

# RED-SIDED SHORT-TAILED OPOSSUM



*Monodelphis sorex* (Hensel, 1872)



**FIGURE 1-** (FPMAM318PH) Adult male specimen head detail, Paraguay (Ulf Drechsel [www.pybio.org](http://www.pybio.org)).



**FIGURE 2-** (FPMAM315PH) Adult male specimen, Paraguay (Ulf Drechsel [www.pybio.org](http://www.pybio.org)).

**TAXONOMY:** Class Mammalia; Subclass Theria; Infraclass Metatheria; Magnorder Ameridelphia; Order Didelphimorphia; Family Didelphidae; Subfamily Marmosinae; Tribe Monodelphini (Myers et al 2006). Twenty-nine species are recognised in this genus, three are present in Paraguay. Assigned to the The scientific name *Monodelphis* is from the Greek meaning "single womb" in reference to the lack of a pouch, *sorex* is Latin meaning "shrew" (Braun & Mares 1995). The species is monotypic.

This species suffers from a complicated taxonomic history. The species was originally described on the basis of immature specimens and as a result many immature specimens referred to in the literature are reliably identified. However adult female and half-grown males have in the past frequently referred to as Hensel's Short-tailed Opossum *Monodelphis henseli* (Thomas 1888) and this name has continued to appear in recent works on South American mammals (eg. Redford & Eisenberg 1992, Hershkovitz 1992, Massoia et al 2006) perpetuating the confusion. Furthermore adult males have frequently been confused with *M.dimidiata* (Wagner 1847), and also attributed to two defunct taxa *M.tricolor* (Lund 1840) and *M.touan* (Shaw 1800), both of which are synonyms of the Guianan Short-tailed Opossum *M.brevicaudata* (Erxleben 1777) a species confined to northern Amazonian South America.

Assigned to the *dimidiata* species group within *Monodelphis* by Solari (2010). He questioned the specific distinctness of *M.sorex* and *M.dimidiata*, the only two members of the species group, noting that "the taxa do not form reciprocal monophyletic groups" and "show very low internal divergence (< 0.5%), similar to the range found in among populations of a single species of recent divergence". Were they to be synonymised the oldest available name would be *M.dimidiata* Wagner 1847.

As the only "red-sided" *Monodelphis* known from Paraguay this species is likely the "Micouré cinquième, ou micouré à queue courte" of de Azara (1801) (Voss et al 2009). If this is the case then the oldest name attributable to the species is *Monodelphis brevicaudis*, Olfers 1818 and *M.wagneri* Matschie, 1916 is a synonym. Hershkovitz (1959) recognised *M.brevicaudis* as a valid species but assigned no specimens to the taxon and this was followed by Brown (2004) who went so far as to map the species for the Paraguayan Chaco (where *M.sorex* does not occur), though in her text she notes that the species is based on de Azara's description and two lost specimens lacking locality data and that the name may require "reassignment". De la Sancha et al (2007) state that *Monodelphis brevicaudis* has variously been regarded to be a senior synonym of *M.domestica* or *M.brevicaudata*, but is now generally considered a synonym of *M.sorex*. Voss et al (2009) suggest that suppression of the name *M.brevicaudis* by the ICZN may be a preferable cause of action, though they caution that the species level taxonomy of this form is far from clear.

The Tawny-headed Short-tailed Opossum *Monodelphis scalops* was reported erroneously for Paraguay by Contreras & Silveira Avalos (1995), though their written description clearly refers to *M.sorex*, a fact confirmed upon examination of the specimen by de la Sancha et al (2007). Synonyms adapted from Gardner (2007):

*Didelphis tricolor* Lund 1840:19 not *Didelphis tricolor* E. Geoffroy St-Hilaire 1803.

*Didelphys* [*Microdelphys*] *sorex* Hensel 1872:122 Type locality "Rio Grande do Sul" restricted to "Taquara" by Cabrera (1958).

*Didelphys* (*Peramys*) *henseli* O.Thomas 1888:159 Type locality "Taquara, Rio Grande do Sul".

*Peramys sorex* O.Thomas 1888:380 Name combination.

[*Didelphis* (*Monodelphis*)] *henseli* Matschie 1916:271 Name combination.

[*Didelphis* (*Monodelphis*)] *lundi* Matschie 1916:271 Type locality "Lagoa Santa, Minas Gerais" based on *D.tricolor* Lund 1840.

[*Didelphis* (*Monodelphis*)] *sorex* Matschie 1916:272 Name combination.

*Peramys henseli* Cabrera 1919:42 Name combination.

*P[eramys* (*Peramys*)] *sorex* A. Mirando-Ribeiro 1936:404 Name combination.

*Peramys henselii* A. Mirando-Ribeiro 1936:409 Incorrect spelling.

*P[eramys]. d.[imidiata]itatiayae* A. Mirando-Ribeiro 1936:421 Type locality "Campo Bello, Rio de Janeiro".

*Monodelphis henseli* Cabrera & Yepes 1940:32 Name combination.

*Monodelphis henseli* Cabrera & Yepes 1940:32 First use of current name combination.

*Monodelphis tricolor paulensis* COC Vieira 1950:359 Type locality "Pirituba, subúrbio da cidade de Sao Paulo".

*Monodelphis touan paulensis* Cabrera 1958:9 Name combination.

*Monodelphis henseley* Tállice, Laffite de Mosera & Machado 1960:151 Incorrect spelling.

*Monodelphis touan* Olrog & Lucero 1981:68 Not *Mustela touan* Bechstein 1800.

*Monodelphis henseli* Ávila-Pires 1994:369 Name combination.

*Microdelphis sorex* Ávila-Pires 1994:369 Name combination.

*Monodelphis breviceaudatus* Chebez & Massoia 1996: 199 Not *Didelphis breviceaudatus* Erxleben 1777.

**ENGLISH COMMON NAMES:** Red-sided Short-tailed Opossum, Southern Red-sided Opossum (Gardner 2007), Hensel's Short-tailed Opossum (Redford & Eisenberg 1992), Shrewish Short-tailed Opossum (Wilson & Cole 2000, Canevari & Vaccaro 2007).

**SPANISH COMMON NAMES:** Colicorto rojizo (Canevari & Vaccaro 2007, Massoia et al 2000), Colicorto selvático (Canevari & Vaccaro 2007, Massoia et al 2000), Colicorto musaraña (Canevari & Vaccaro 2007, Emmons 1999), Musaraña (Massoia et al 2000), Colicorto de Hensel, Colicorto Misionero (Massoia et al 2006).

**GUARANÍ COMMON NAMES:** Guaiquiaca-aña (Canevari & Vaccaro 2007), Anguja (Massoia et al 2000), Mbicuré-í (Massoia et al 2000, Canevari & Vaccaro 2007).

**DESCRIPTION:** A small to medium-sized *Monodelphis* with short, rounded ears and tail approximately 50% of head and body length. Pelage short and smooth, lying flat against the body. Forehead, crown and dorsum dark brown, somewhat greyer on the head and reddish-orange on the rump. Sides of head to just above the eye orange-rufous. Flanks and sides reddish-orange, sometimes with slight greyish tinge but always clearly demarcated from the dorsal and ventral colouration. Venter creamy-yellow to pale reddish. Feet reddish. Tail dark brown above and pale reddish below. Great sexual dimorphism in size with males up to 50% larger than females. Females lack a pouch and possess more mammae than any other mammal (25-27) arranged with five central nipples and the remainder in lateral lines. Juvenile with similar pattern to adults but much darker, reddish-chestnut on flanks and sides.

**CRANIAL CHARACTERISTICS:** The following cranial measurements are those provided by Contreras & Silveira Avalos (1995) for their male Paraguayan specimen: *Greatest Length:* 35.4mm; *Minimum Postorbital Constriction:* 5.6mm; *Width of Brain Case:* 13.9; *Greatest Zygomatic Width:* 20.5mm; *Mandible Length:* 27mm; *Length of Nasals:* 15.5mm; *Palate Length:* 17.4mm.

**DENTAL CHARACTERISTICS:** I5/4 C1/1 P 3/3 M 4/4 = 50. The following dental measurements are those provided by Contreras & Silveira Avalos (1995) for their male Paraguayan specimen: *Length of Upper Tooth Row* 16.9mm; *Length of Upper Molar Row* 9.9mm; *Length of Lower Tooth Row* 14.1mm; *Distance across M3* 10.1mm; *Distance M1-M4 on Upper Tooth Row* 5.7mm; *Distance M1-M4 on Lower Tooth Row* 7.2mm.

**GENETIC CHARACTERISTICS:** 2n=18 (Svartman & Vianna-Morgante 1999).

**TRACKS AND SIGNS:** No information.

**EXTERNAL MEASUREMENTS:** A medium-sized Short-tailed Opossum. There is marked sexual dimorphism in size, with males up to twice the size and weight of females. **TL:** 14.48cm (11.9-21.5cm); **HB:** 9.38cm (7.8-13cm); **TA:** 5.1cm (3.6-8.5cm) approximately 50% of body length; **FT:** 1.52cm (1.5-1.55cm); **EA:** 0.88cm (0.53-1.1cm); **WT:** 48g; (Massoia et al 2000, Redford & Eisenberg 1992, Emmons 1999).

Contreras & Silveira Avalos (1995) gave the following measurements for a single male specimen wrongly identified by them as *M. scalops*: **TL:** 21cm; **HB:** 14.5cm; **TA:** 6.5cm; **FT:** 1.7cm not including claw, 1.9cm including claw; **EA:** 1.5cm; **WT:** 68g.

**SIMILAR SPECIES:** Intermediate in size amongst the three *Monodelphis* species currently documented for Paraguay, this is the only species that occurs in the Atlantic Forest. This species can be instantly separated from the other two species on account of its distinctive pelage colouration with reddish flanks contrasting with a grey-brown dorsal surface. Other Paraguayan species are uniformly coloured. Note however that juveniles are much darker than adults and were once considered a separate species.

Two additional species of possible occurrence in Paraguay are confusable with this species. The Tawny-headed Short-tailed Opossum *Monodelphis scalops* is clearly distinguishable by its uniformly tawny head, which lacks the brownish-grey crown and forehead of this species, and has grey rather than reddish-orange flanks.

The Yellow-sided Short-tailed Opossum *Monodelphis dimidiata* is of similar general patternation and size to this species. However the dorsal area is distinctly grey, not grey-brown as in this species and the flanks and side of the face are pale tawny-yellow, not reddish-orange. Note that in *M. sorex* the lateral

reddish colouration is sharply demarcated from the pale mid-venter whereas in *M.dimidiata* there is a gradual shading from the sides to the mid-venter. *M.dimidiata* has long, lax fur (except in old males), compared to the short, smooth fur of this species, and the feet are whitish or buffy as opposed to reddish in *M.sorex*. Furthermore *M.dimidiata* occurs in open, grassy habitats, not humid forests.

**DISTRIBUTION:** An Atlantic Forest endemic species occurring in southern Brazil, south-eastern Paraguay and Misiones Province in Argentina (Departamentos Cainguas, Guaraní, Iguazú, Oberá, General Belgrano and Montecarlo and likely San Pedro - Massoia et al 2006). In Brazil the records are clustered in Minas Gerais, Sao Paulo and Rio Grande do Sul, though the species likely occurs more or less continuously between those points where suitable habitat occurs. In Paraguay there are specimen records from PN San Rafael, Departamento Itapúa and 12km W of Ciudad del Este area, Departamento Alto Paraná (Contreras & Silveira Avalos 1995).

**HABITAT:** Occurs in humid Atlantic forest in eastern Paraguay where it is the only *Monodelphis* so far reported. In Misiones it apparently tolerate considerable disturbance being found in capuera and cultivated areas close to forest (Massoia et al 2006).

**ALIMENTATION:** Considered to be insectivorous by Canevari & Vaccaro (2007) and "principally carnivorous" by Massoia et al (2000).

**Foraging Behaviour and Diet** Casella & Cáceres (2006) published the first specifics on the diet of this species after studying stomach contents of animals (n=26) captured in western Paraná State, Brazil. They considered the species to be an opportunistic generalist feeder with a principally insectivorous diet supplemented with meat and fruit. Arthropods were the principal item in the diet with Coleoptera the single most prevalent group found in 92% of stomachs. Other animal items found in stomachs in order of prevalence were: Hymenoptera 80%, Blattaria 31%, Mammalia 31%, Orthoptera 30%, Decapoda 15%, Opiliones 15%, Acari 8%, other Crustacea 8%, Myriapoda 4%, Aves 4% and insect larvae 4%. Seeds were found in 8% of stomachs (*Cecropia sp.* and *Rubus sp.*) and unidentified plant material in 30% of stomachs. Of the 57 seeds found, 54 were intact and only 3 had been predated, suggesting that it was the fruit that had been consumed and indicating that the species may play a role in seed dispersal.

**REPRODUCTIVE BIOLOGY:** No published information. **Pregnancy** The species has the largest number of mammae of any mammal (25-27) and in view of this Gardner (2007) suggested that the species may prove to be semelparous - a possibility supported by the high number of young individuals when compared to adults in specimen collections.

**GENERAL BEHAVIOUR: Activity Levels** The species is terrestrial and crepuscular (IUCN 2008). No other published information.

**Mortality** Ávila-Pires & Gouvêa (1977) mentioned a specimen of *M.dimidiata* taken from the oesophagus of a *Elanus leucurus*, but Gardner (2007) considers it more likely that it was this species - however White-tailed Kite is an open-country species that does not occur in Atlantic Forest and *M.dimidiata* is typical of grassland habitats (P.Smith pers.obs.). Massoia et al (2006) note that it is regular in pellets of *Tyto alba* in Misiones, Argentina.

**Parasites** The tick *Ixodes loricatus* (Ixodidae) has been recorded on this species (Barros-Battesti & Knysak 1999).

Notman (1923) described an ectoparasitic Staphylinid beetle *Omaloxenus bequarti* found on a *Monodelphis* collected at "Alto Itatiaya, Setto (sic) do Itatiaya, Brazil" which may have been this species. Fain (1979) reported *M.dimidiata* as the host of a Lirophid mite *Didelphoecius paranensis*, but Gardner (2007) believes that the correct identification of the host may actually be *M.sorex*.

**VOCALISATIONS:** No information.

**HUMAN IMPACT:** This rarely-encountered forest species has little impact on humans within its range.

**CONSERVATION STATUS:** Globally considered to be Low Risk, Least Concern by the IUCN on account of a supposedly wide distribution and its occurrence in a number of protected areas. See



<http://www.iucnredlist.org/details/13701> for the latest assessment of the species. The species has recently been downgraded from its previous designation as vulnerable.

This species is considered endemic to the Atlantic Forest, one of the world's most seriously threatened habitat types and is probably worthy of greater conservation concern. Canevari & Vaccaro (2007) consider the species to be vulnerable in Argentina and insufficiently known in Brazil. Flores (2006) consider the species vulnerable in Argentina but Massoia et al (2006) disagree and consider the species "undoubtedly the commonest *Monodelphis* of the Paranaense forest" in Argentina and likely more widespread than currently known.

Population size in Paraguay is unknown but, as in other areas of the range, areas of available suitable habitat have declined alarmingly over recent decades. Though surveys have been insufficient to determine population sizes there is little doubt that the population is in decline as a result of habitat destruction. The species is present in PN San Rafael, but currently the reserve faces serious conservation issues, suffers from inadequate protection and a questionable legal status. It is presumably present in some of the Itaipú Reserves in Departamento Alto Paraná but deforestation in this area has been massive and huge areas of prime forest were lost as a result of the Itaipú dam project.

Although the species obviously tolerates some degree of habitat disturbance, there is no doubt that the species is threatened in Paraguay, as with other species associated with the Atlantic Forest. It is apparently absent from the Mbaracayú Forest Reserve, Departamento Canindeyú, arguably Paraguay's best protected Atlantic Forest reserve (Esquivel 2001).

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**CITATION:** Smith P 2008 - FAUNA Paraguay Handbook of the Mammals of Paraguay Number 26  
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**FIGURE 3-4 -** (FPMAM316PH - FPMAM317PH) **Red-sided Short-tailed Opossum** *Monodelphis sorex*. Dorsal and ventral views of adult male specimen. Paraguay. Photo Ulf Drechsel [www.paraguaybio.org](http://www.paraguaybio.org).

**FIGURE 5 - Red-sided Short-tailed Opossum** *Monodelphis sorex*. Juvenile. Brazil, undated. Photo Nilton Cáceres.



**FIGURE 6 -** (FPMAM321PH) **Red-sided Short-tailed Opossum** *Monodelphis sorex*. Adult skull lateral. Paraguay. Photo Ulf Drechsel [www.pybio.org](http://www.pybio.org).

**FIGURE 7 -** (FPMAM319PH) **Red-sided Short-tailed Opossum** *Monodelphis sorex*. Adult skull dorsal. Paraguay. Photo Ulf Drechsel [www.pybio.org](http://www.pybio.org).



**FIGURE 8 -** (FPMAM320PH) **Red-sided Short-tailed Opossum** *Monodelphis sorex*.  
Adult skull ventral. Paraguay. Photo Ulf Drechsel [www.pybio.org](http://www.pybio.org).

**FIGURE 9 -** **Red-sided Short-tailed Opossum** *Monodelphis sorex*.  
Adult mandible. Paraguay. Photo Ulf Drechsel [www.pybio.org](http://www.pybio.org).