



# THICK-TAILED OPOSSUM

*Lutreolina crassicaudata* (Desmarest, 1804)



**FIGURE 1** - Adult, Brazil (Nilton Caceres undated).

**TAXONOMY:** Class Mammalia; Subclass Theria; Infraclass Metatheria; Magnorder Ameridelphia; Order Didelphimorphia; Family Didelphidae; Subfamily Didelphinae; Tribe Didelphini (Myers et al 2006). The genus *Lutreolina*, Thomas 1910, contains a single species. *Lutreolina* is derived from the Latin meaning "otter-like or mink-like", *crassicaudata* is also Latin and means "provided with a thick-tail", describing the species most unusual physical feature (Braun & Mares 1995).

There are two recognised subspecies, that present in Paraguay is *L.c.crassicaudata* (Desmarest 1804) (Type Locality Asunción, Paraguay). Several other subspecies have been described on the basis of differences in size and pelage colour, but these characteristics are highly variable even within a single population and were synonymised with *L.c.crassicaudata* by Marshall (1978).

Desmarest (1804) described the species based on de Azara's (1801) "Micouré troisième, ou micouré à queue grosse" (Voss et al 2009). Synonyms adapted from Marshall (1978) and Gardner (2007).

*Didelphis crassicaudata* Desmarest 1804:19. Based on de Azara (1801). Type locality restricted to Asunción, Paraguay by Cabrera (1958).

*Didelphis crassicaudis* Illiger 1815:107. Nomen nudum.

*D[idelphys]. crassicaudis* Olfers, 1818:206. Type locality "Paraguay". Objective synonym.

*S[arigua]. crassicaudata* Muirhead 1819:429. Name combination.

*Didelphis macroura* Desmoulins 1824:492. Based on Azara (1801).

*Peramys crassicaudata* Lesson 1842:187. Name combination.

*D[idelphys]. crassicaudata* Schinz 1844:257. Name combination.

*Didelphis mustelina* Waterhouse 1846:497. Nomen nudum.

*Micoureus crassicaudatus* P.Gervais 1855:287. Name combination.

[*Didelphys* (*Metachirus*)] *crassicaudatus* Hensel 1872:121. Name combination.

*Didelphys turneri* Günther 1879:103. Type locality “Demerara”. Identified as “Better Hope, Demerara” (=Better Hope, Pomeroon-Supenaam, Guyana) by O.Thomas (1888).

*Lutreolina crassicaudata* O.Thomas 1910:247. New genus and name combination.

[*Didelphis* (*Peramys*)] *turneri* Matschie 1916:269. Name combination.

*L.[utreolina] c[rassicaudata]. bonaria* O.Thomas 1923:585. Type locality “Los Yngleses, Ajo” Buenos Aires, Argentina.

*L.[utreolina] c[rassicaudata]. paranalis* O.Thomas 1923:584. Type locality “Las Rosas, Santa Fé” Argentina.

*L.[utreolina] c[rassicaudata]. lutrilla* O.Thomas 1923:585. Type locality “San Lorenzo, Rio Grande do Sul” Brazil.

*L.[utreolina] c[rassicaudata]. turneri* O.Thomas 1923:583. First use of actual subspecific name.

*Didelphis ferruginea* Larrañaga 1923:346. Implied type locality Uruguay. Based in part on de Azara (1802).

*Lutreolina c[rassicaudata]. travassosi* Miranda-Ribeiro 1936:402. Type locality “Guariba, Estado de São Paulo” Brazil.

*Lutreolina crassicaudus* Hildebrand 1961:244. Incorrect spelling.

**ENGLISH COMMON NAMES:** Thick-tailed Opossum (Marshall 1978, Redford & Eisenberg 1992), Little Water Opossum (Redford & Eisenberg 1992, Regidor et al 1999), Lutriline Opossum (Wilson & Cole 2000, Gardner 2007), Mink-opossum (Santori et al 2005), Red Opossum (Muschetto et al 2011), Lesser Water Opossum (Anderson 1997).

**SPANISH COMMON NAMES:** Comadreja colorada (Marshall 1978, Chebez 1996, Massoia et al 2000), Comadreja colorada grande (González 2001), Coligrueso (Marshall 1978, Chebez 1996, Massoia et al 2000), Zarigüeya colorada (Chebez 1996), Cuica (Marshall 1978, Chebez 1996, Massoia et al 2000), Zarigüeya nutria (Emmons 1999), Comadreja coligruesa (Massoia et al 2006).

**GUARANÍ COMMON NAMES:** Mbicuré pytá (Chebez 1996), Mbicuré-pitá (Chebez 1996), Mbihkurê-pihtá (Chebez 1996), Mykure pyta (SEAM 2001), Mbicuré pythá (Parera 2002), Bechi Ac (Esquivel 2001).

**DESCRIPTION:** A medium-sized semi-aquatic opossum with a vaguely weasel-like appearance. The dense, smooth pelage is uniformly pale brownish or brownish-red dorsally, lacking any bold markings or distinguishing features, and slightly paler ventrally. Pelage colour is extremely variable, and Marshall (1978) notes that captive specimens actually changed colour according to environmental conditions and diet. The pinkish rhinarium has a rounded posterior projection, sharply-defined from the furred part of the face and there is an indistinct dark patch on the snout. Lemke et al (1982) note that a specimen from Colombia ssp *turneri* had a “clear reddish muzzle dorsally”. The ears are small, rounded with a long basal projection on the inner edge. They are barely visible above the pelage and when laid forward they reach half the distance to the eye. The metatragus is rounded and well-developed. Eyes are dark brown. Legs are short and stout. The feet are dark brown to pinkish, similarly broad with small, narrow pads on the feet and non-opposable hallux and pollex. There are five toes on each foot. The fifth hind toe reaches only to the mid-point of the first phalanx of the fourth toe. Each toe is armed with a long, slender, whitish claw. The tail is extremely thickened at the base, the junction with the body being difficult to discern. It is thickly furred along the basal half and more thinly so over the rest of its length, with the terminal 5cm of the ventral surface naked. Where thinly furred the tail is darker, almost blackish and it is white-tipped. The tail is only moderately prehensile and less so than in other Didelphids. Though the pouch is frequently reported as undeveloped, specimens examined by Lemke et al (1982) had a well-developed pouch and Parera (2002) postulates that the extent of development may in fact vary individually. There are between 9 and 11 mammae. Juveniles are similar to adults but have the tail furred along much of its length, lacking the basal swelling.

**CRANIAL CHARACTERISTICS:** Cranium unique amongst the opossums on account of the long narrow zygomatic and cranial regions when compared to the short rostrum. The nasals are short and narrow, expanding posteriorly. The zygomatic arch is long and high, but robust despite the fact that it is not strongly expanded. Forehead gently domed and brain case long, narrowing in the interorbital region where smoothly rounded. (Marshall 1978). Shows several adaptations related to a more carnivorous diet. Braincase narrower and longer than similar-sized species with widened temporal fossa and broader, more perpendicular coronoid processes. (Vieira & Astúa de Morães 2003). *Condylbasal Length* 68.7mm (54.7-

82.5mm); *Transverse Zygomatic Width* 36.5mm (28.6-46.2mm); *Temporal Constriction* 7.9mm (7.2-8-8mm); *Mandibular Length* 53.3mm (43.8-63.7mm) (Marshall 1978).

Mares & Braun (2000) give the following combined sex measurements for 2 individuals (2 males, 1 females and 1 unsexed) from Argentina: *Greatest Skull Length* 59.2mm (55.5-64.2mm); *Condylbasal Length* 58.8mm (56-63.2mm); *Interorbital Constriction* 7.9mm (7.5-8.4mm); *Zygomatic Width* 29.6mm (27.5-32.2mm); *Width of Braincase* 17.8mm (16.8-19.2mm); *Palate Length* 32.2mm (31.1-33.1mm); *Length of Mandible* 46.1mm (44.4-48.4mm).

Sanchez-Villagra (2002) notes that the subarcuate fossa in this species is relatively smaller than in Old World marsupials of similar size. For four specimens of skull size 27.71mm (+/-1.25) the subarcuate fossa volume was 8.61 $\mu$ l (+/-1.48).

**DENTAL CHARACTERISTICS:** I5/4 C1/1 P 3/3 M 4/4 = 50. *Upper Tooth Row* 28.9mm (22.8-31.3mm); *Lower Tooth Row* 28.9mm (24.1-33-8mm); *Length M1-M3* 10.4mm (9.5-12.2mm) (Marshall 1978). Mares & Braun (2000) give the following combined sex measurements for 2 individuals (2 males, 1 females and 1 unsexed) from Argentina: *Upper Tooth Row* 24.3mm (19.3-29.7mm); *Lower Tooth Row* 21.5mm (17.6-26-7mm).

Regidor et al (1999) state that sequence of tooth eruption is a good indicator of age. Deciduous M1 characterise juvenile age classes, P3 subadult age classes and complete permanent dentition P1-3, M2-5 attained at six months and indicating adulthood.

**GENETIC CHARACTERISTICS:** 2n=22. (Redford & Eisenberg 1992, Svartman & Vianna-Morgante 1999). X-chromosome is metacentric and Y-chromosome acrocentric (Marshall 1978).

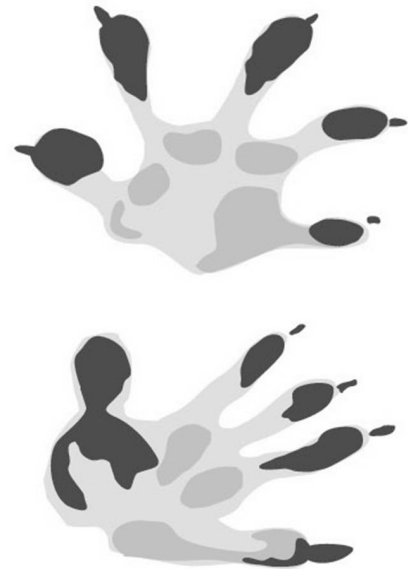
**TRACKS AND SIGNS:** Not dissimilar to *Didelphis* in form and forefoot almost identical. Prints are wider than they are long with a "rotated" appearance, the digits appearing angled to the direction of the pace on the hindfoot. Hindfoot with thumb less opposable than *Didelphis*, though basic form is similar. (Masoia et al 2006).

**EXTERNAL MEASUREMENTS:** A medium-sized opossum with tail approximately equal to the head and body length. There is considerable variation in size of adults, with some specimens twice the size of others, in part due to the fact that they do not reach maximum size until well after reaching sexual maturity (Marshall 1978). Males are larger than females (Eisenberg & Redford 1999). **TL:** 57.4cm (46.6-78.1cm); **HB:** 28.94cm (19.7-37.8cm); **TA:** 28.19cm (22.1-39cm); **FT:** 4.38cm (3.5-5.4cm); **EA:** 2.63cm (1.8-3.8cm); **WT:** 514.54g (176-1500g). (Redford & Eisenberg 1992, Parera 2002, Marshall 1978). Regidor et al (1999) note that adult males are heavier than adult females **WT:** male 790.54g (+/-138.73, n=37) female 522g (+/-111.54, n=18).

Muschetto et al (2011) give the following measurements for sexed specimens from Provincia Buenos Aires, Argentina (n= 13 males, 12 females): **HB:** male 31.67cm (+/- 3.13cm), female 28.54cm (+/- 2.49cm); **TA:** male 28.05cm (+/- 1.92cm), female 25.97cm (+/- 1.83cm); **FT:** (including claws) male 4.92cm (+/- 0.24cm), female 4.37cm (+/- 0.21cm) (not including claws) male 4.51cm (+/- 0.21cm), female 4.05cm (+/- 0.33cm); **EA:** male 1.71cm (+/- 0.49cm), female 1.91cm (+/- 5.7cm); **WT:** male 737.2g (+/- 339.7g), female 490.4g (+/- 127.1g).

Monteiro-Filho et al (2006) give the following measurements for sexed specimens from Santa Catarina, Brazil (n= 8 males, 12 females): **HB:** male 29cm (+/- 3.1cm), female 25.8cm (+/- 3cm); **TA:** male 26.7cm (+/- 1.9cm), female 24.5cm (+/- 1.4cm); **FT:** male 4.1cm (+/- 0.2cm), female 3.5cm (+/- 0.2cm); **EA:** male 2.6cm (+/- 0.3cm), female 2.5cm (+/- 0.3cm); **WT:** male 435g (+/- 160g), female 358g (+/- 88g).

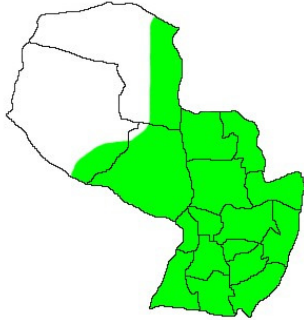
Mares & Braun (2000) give the following combined sex measurements for 6 individuals (3 males and 3 females) from Argentina: **TL:** 47.18cm (37-54cm); **HB:** 23.27cm (19-29cm); **TA:** 23.92cm (18-26cm); **FT:** 3.77cm (2.8-4.3cm); **EA:** 2.48cm (2.35-2.6cm); **WT:** 270.8g (176-430g).





Lemke et al (1982) give the following mean measurements for 6 pouched young from Colombia ssp. *turneri*: **TL**: 56mm; **TA**: 16mm; *Crown-rump Length* ? 36mm.

**SIMILAR SPECIES:** Unlikely to be confused if seen well. Weasel-like in appearance and behaviour, it is quite unlike any other opossum. The only other opossum that is likely to take to water is the quite different *Chironectes minimus*. There is a vague resemblance to a small otter, but otters are considerably larger with quite different behaviour, are generally active by day and have the tail fully-furred without obvious thickening at the base.



**DISTRIBUTION:** Two widely sympatric populations north and south of Amazonia assigned to two different subspecies. It has been alternatively hypothesised that the species may have historically occurred in the intervening area, or that it does still occur but has yet to be detected because of a lack of sampling (Nowak 1991). The nominate subspecies *L.c.crassicaudata* Desmarest 1804 is the most widespread, found over a wide area of central and southern South America from central Bolivia (not including the Amazonian regions), through eastern Paraguay (including the Pantanal region) and southern Brazil, south to Uruguay and Argentina as far as Provincia Chubut. However despite the wide geographical range it appears to be rather patchily distributed, and it may be absent from much of central Argentina, leaving the population in Provincia Jujuy somewhat isolated - animals in this region are smaller and darker than those of the rest of Argentina, though they are not currently afforded subspecific recognition (Díaz & Barquez 2002). The northern

subspecies *L.c.turneri* Günther 1879, was for a long time known only from a few specimens in Guyana, though it has since been proven to occur patchily into eastern Venezuela and eastern Colombia (Nowak 1991).

Flores (2006) lists the species for the Provinces of Buenos Aires, Córdoba, Corrientes, Chaco, Entre Ríos, Formosa, Jujuy, La Pampa, Mendoza, Misiones, Salta, Santa Fé and Tucumán in Argentina. In Brazil its precise distribution is unclear, though present in the Pantanal and the State of Rio Grande do Sul, its distribution in the area between the two is uncertain. However it is not known to occur north of Rio de Janeiro in Brazil, or north of Beni in Bolivia. In Bolivia Anderson (1997) reports it from Departamentos Beni and Tarija, at opposite poles of the country. In Paraguay the distribution is very poorly known and there are few specimen records.

**HABITAT:** Found in a variety of habitats, typically semi-open and in the vicinity of water, including natural grasslands, gallery woodland (in the Pantanal and cerrado) and palm savannas (in the Humid Chaco). In San Rafael National Park it has been seen on streams in marshy areas at the intersection of pasture and Atlantic Forest (ECOSARA Biodiversity Database). In Provincias Jujuy, and Tucumán, Argentina it occurs in dense humid forests and may do so at least marginally in other areas of the range, including Paraguay (Mares et al 1996).

**ALIMENTATION:** An aggressive predator and active hunter, exploring crevices and holes in search of prey (Parera 2002). Though best considered an opportunistic omnivore, the diet varies geographically and in some areas the species is almost entirely carnivorous, taking a variety of invertebrate and vertebrate prey, including mammals, small birds and their eggs, fish, reptiles and amphibians. Vertebrate prey is typically killed with a bite to the nape (Emmons 1999).

**Foraging Behaviour and Diet** Cáceres et al (2002) studied the diet of this species in secondary Atlantic Forest on Santa Catarina Island, Brazil by analysis of fecal samples. Of 13 fecal samples they found that crabs (54% of samples) and beetles (46%) were the main items in the diet. Other animal items documented were in order of prevalence: Opiliones (31%), Hymenoptera (23%), Lepidoptera (15%), Diptera (15%), Diplopoda (15%), Orthoptera (15%), Birds (15%), Bones (15%). Plant material included *Cecropia glaziovii* (85%), *Piper* sp. (62%), *Ficus* sp. (15%) and unidentified Aracaceae and Solanaceae (8% each). The species was calculated to drop a mean of 765 (+/-1995) seeds per fecal sample/night. Consumption of plant material was greatest during warm wet months (March to May) and lower or absent in cold months (June to August). The presence of undamaged seeds in fecal samples means that the species is likely an important disperser for early-colonising plants such as *Cecropia*. Cáceres (2006) lists the

following additional plant species recorded in the diet of this species *Acrocomia sclerocarpa* and *Syagrus romanzoffiana* (Arecaceae), *Cecropia cinerea* (Cecropiaceae), *Passiflora* sp. (Passifloraceae), *Miconia* sp (Melastomataceae) and *Cestrum* sp (Solanaceae).

An individual at San Rafael NP was observed to swim towards a singing toad *Rhinella ornata*, capture it and eat it at 7pm during April 2008 (David Gill pers. comm.). One stomach contained pieces of mollusc shells and sand, suggesting foraging on river bottoms. Massoia et al (2006) mention juveniles of *Myocastor coypus* and *Didelphis albiventris* as being taken by adults in Misiones, Argentina.

Muschetto et al (2011) describe the diet as varied noting the following items as present: seeds (4 morphotypes) and vegetal remains (29.4%), amphibians (17.3%), birds (11.8%), arthropods (11.8%), snails (*Lymnaea* sp., 5.9%). On average 3.2 (+/-7) seeds were present per faecal sample analysed (n=17). Despite the high abundance of rodents in the study area, they did not find small mammal remains in their samples, contra other published reports (Barquez et al. 1991; Díaz & Barquez 2002).

Individuals have been captured in traps baited with mice (Eisenberg & Redford 1999), banana and peanut butter (Cáceres et al 2002) and are also occasionally captured in traps set for *Myocastor coypus* (González 2001). Sanborn (1929) mentions two juveniles captured in rat traps baited with meat in Departamento Minas, Uruguay, but notes that attempts to catch adults in steel traps were unsuccessful.

**Diet in Captivity** Captive individuals at New York Zoological Gardens were maintained on a diet of sliced butterfish, mixed with meat, frogs, earthworms, shrimps and mice (Davis 1966). Elsewhere captive individuals have been fed on fruit and seen to kill mammals up to the size of the wild guinea-pig *Microcavia*.

Astúa de Morães et al. 2003 experimentally tested the proportions of protein, lipid, carbohydrate and fibre in the diet of a single adult under laboratory conditions. Mean proportions per 100g dry weight of food were: protein 27.48g; lipid 7.20g; carbohydrate 16.28g; fibre 1.60%. Santori et al (2004) described and illustrated the gut morphology of this species and associated it with dietary habits.

**REPRODUCTIVE BIOLOGY:** Little known. There is some evidence to suggest that males are polygynous or at least promiscuous (Monteiro-Filho et al 2006). Regidor et al 1999, Muschetto et al 2011) found the ratio of males to females to be 23:13 in Provincia Buenos Aires, differing significantly from the expected 1:1 ratio. However Muschetto et al (2011) working in the same Provincia found an overall sex ratio of 53% males and 47% females (n=77) with no significant divergence from the expected ratio.

**Seasonality** Regidor et al (1999) stated that breeding in Provincia Buenos Aires begins in September after a five months anestrus period and is finished by early April, with all members of the study population in breeding condition at the onset of the reproductive season. It would seem that they breed twice a year, once in the spring and again following the independence of the first litter. The first litters were born in late September and second litters were produced in late December or early January.

Muschetto et al (2011) captured juveniles and subadults (age < 5.5 months) during summer and autumn only in Provincia Buenos Aires and estimated birth dates to be from September to February. They worked in a temperate area and noted the fact that almost all females captured at the beginning of spring were in a breeding condition could be a response to temporarily favourable climatic conditions, whereas in tropical areas reproduction may begin earlier in response to resource availability.

Females with young have been captured in southeastern Brazil from June to October (Monteiro-Filho et al 2006) and further south in the same country a lactating female was captured in January and recaptured in February with young (Graipel unpublished data in Monteiro-Filho et al 2006).

**Pregnancy** Gestation period is about two weeks (Nowak 1991). Females are capable of conceiving even before they are dentally mature and with a mass of 200g (Monteiro-Filho et al 2006). Litter size is between 6 and 11 (Parera 2002, Eisenberg & Redford 1999) with a mean of 8.7 in southeastern Brazil (Graipel unpublished data in Monteiro-Filho et al 2006). Regidor et al (1999) give a litter size of 7 to 11 (mean 8.6, +/-1.52, n=5), and Muschetto et al (2011) noted litters of 8, 9 and 11 in three females.

Mares & Braun (2000) note a female with 8 young captured in October in Provincia Corrientes. Lemke et al (1982) note a female in Colombia with 7 young attached to the nipple, consisting of four males, 2 females and one head (a dog having eaten the rest of the body!). Regidor et al (1999) note one nursing female from Provincia Buenos Aires that was captured in October, to again be with pouched young about 2.5 months old when it was recaptured in early March.

The young are raised in a spherical nest of dry grass located in tree holes, amongst rushes or in burrows, either dug by the animal itself or by other species such as armadillos (Massoia et al 2000). They will even utilise bird nests.

**Development** Initially the young are carried ventrally, either in a pouch or clinging to the underside of the animal, as they grow they cling to the dorsal pelage (Parera 2002). Regidor et al (1999) found the sex ratio of pouched young to be males 20: females 15. They concluded that young were weaned by three months of age. Sexual maturity is reached at 6 months of age, and juveniles probably do not reproduce until the following breeding season after their birth.

**GENERAL BEHAVIOUR: Activity Levels** Largely nocturnal, this species is as weasel-like in behaviour as it is in appearance. The species is only occasionally active by day, but the extent to which diurnal activity is the norm and the factors influencing it have not been studied. Cáceres et al (2002) only caught the species on the ground and generally close to creeks. Muschetto et al (2011) noted a seasonal fluctuation in trapping success, with peaks in autumn and lowest numbers in spring.

**Locomotion** It is an active, agile and efficient hunter, moving rapidly over level ground, but equally at home climbing in trees and an excellent swimmer. (Parera 2002). When swimming the species dives frequently. Santori et al (2005) found that the species swims with a quadruped, paddling gait and that whilst swimming speed was similar to terrestrial didelphids, the buoyancy and stroke frequency were closer to that of the aquatic *Chironectes minimus*. Under laboratory conditions mean swimming speed was 0.43m/s (+/-0.02). The dorsum, eyes and nostrils were maintained above the water surface and the nose below. Body position was roughly horizontal or slightly inclined and the body and tail made smooth bilateral movements to propel the animal through the water, with greatest propulsion provided by the hindlimbs. During the power stroke the hindlimb was forced backwards with toes extended, and on the recovery stroke the foot was swept forwards with digits adducted. Forelimbs were moved in a rotational motion slower than that of the hindlimbs and provided balance rather than propulsion. They considered that the species was not specialised for aquatic locomotion. On land they move with a trot at low speed, increasing to a gallop at high speed, but the vertebral column is never undulated. Speed during terrestrial locomotion was 1.01m/s. When walking along a horizontal tube a similar gait to low speed terrestrial locomotion was observed with a speed of 0.17 m/s. When walking along an angled trunk the speed increased to 0.35 m/s with step length 0.13m. When climbing the angled trunk only the forelimbs were used to support the animal and the hindlimbs were brought forward to form a bounding motion. When jumping the hindlimbs were brought together with the forelimbs and the animal leans forwards. The spinal column is flexed and the hindlimbs suddenly extended to generate the jumping force. Whilst in mid-air both the entire body and limbs are extended.

**Home Range** Little data apparently exists. In southern Brazil a recapture analysis estimated the home range of a male and a female respectively at 6517.5m<sup>2</sup> and 8107.5m<sup>2</sup> (Graipel unpublished data in Monteiro-Filho et al 2006). In Provincia Tucumán, Argentina home ranges of two individuals were given as 650m<sup>2</sup> and 950m<sup>2</sup> (Cajal 1981). Muschetto et al (2011) noted that individuals removed the ear tags that were used to mark them. They suggested that juvenile males at the Reserva Costanera Sur, Provincia Buenos Aires, Argentina may have difficulty in dispersing, though that is perhaps related to the isolated nature of the reserve.

**Defensive Behaviour** Captured animals are frequently extremely aggressive (González 2001).

**Mortality** Recently independent juveniles fall easy prey to diurnal raptors such as *Rupornis magnirostris* and large owls such as *Bubo virginianus* and *Tyto alba*. Adults undoubtedly fall prey to Canids and Felids.

**Parasites** Limardi (2006) lists the following ectoparasites from Brazil: Siphonaptera: *Craneopsylla minerva* (Stephanocircidae); *Polygenis puelche* and *P.rimatus* (Rhopalopsyllidae); *Adoratopsylla intermedia* (Ctenophthalmidae); *Ctenocephalides felis* (Pulicidae). Acari: Metastigmata *Ixodes loricatus* (Ixodidae). Two nematode species have been recorded in Argentina *Travassostrongylus chacoensis* and *Hoineffia simplicispicula* (Parera 2002). Guglielmo & Nava (2006) note the Ixodid tick *Amblyomma cajennense* from Argentinian specimens.

Vicente et al (1997) list the nematode *Gnathostoma brasiliensis* Ruiz, 1952 in this species from Brazil.



The flagellate protozoan *Tetratrichomonas didelphidis* is found in the intestine, cecum and colon of this species and depends upon *Escherichia coli* as a growth promoting partner. (Tasca & De Carli 2001, 2004, 2007). The morphology of this parasite was described by Tasca et al (2001).

**Physiology** Nogueira et al (1999) describe the penile morphology of this species.

**VOCALISATIONS:** Animals maintain contact with a high-pitched whistle. Threatened animals also whistle. (Emmons 1999). A series of postures and olfactory signals also serve purposes of communication (Parera 2002).

**HUMAN IMPACT:** Currently the species does not appear to be persecuted for its fur, but in the past skins were used to make mats and as fur trimming for clothing. However the fur rapidly loses its colour and a market for the species never developed (Marshall 1978). Because of the species similarity to the Old World weasels (Mustelidae), known as "Comadreja" in Spain, it has been hypothesised that its usage for the New World opossums (Didelphidae) originated with this species (Massoia et al 2000). The species was the subject of the children's book "El Casamiento de la Comadreja" by Vigil (1945). In farming areas it is often persecuted for its attacks on domestic birds and their eggs, though it also plays a positive role in control rodent populations (Parera 2002).

The causative agent of Chaga's disease is *Trypanosoma cruzi*, a digenetic kinetoplastid and enzootic parasite of almost 100 mammal species, including humans. Though typically transmitted to humans via the Reduviid bug *Triatoma infestans*, oral infection with the disease does occur and is often associated with acute forms of the disease. Steindel & Pinto (1988) successfully cultured the protozoan in the scent glands of this species in the laboratory.

**CONSERVATION STATUS:** Globally considered to be of Low Risk Least Concern by the IUCN, see <http://www.iucnredlist.org/search/details.php/40503/all> for the latest assessment of the species. The Centro de Datos de Conservación in Paraguay consider the species to be rare in Paraguay, giving it the code **N3**. Little-recorded because of its unobtrusive, nocturnal habits, this species does not appear to be as rare as records would suggest. In certain areas of Argentina it is even considered abundant (Parera 2002) and was considered Least Concern in that country by Chebez (2009). However, despite its presence in certain semi-urban reserves such as the Costanera Sur in Buenos Aires, it apparently does not tolerate human presence well and likely suffers from drainage associated with agriculture and the conversion of grasslands and marsh habitats into pasture through burning and other means. Olrog (1979) suggested that its increased abundance in some years in Provincia Jujuy, Argentina may be related to the abundance of sigmodontine rodents.

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**FIGURE 2-**  
**Thick-tailed Opossum** *Lutreolina crassicaudata*.  
Subadult. Bolivia, undated.  
Photo Louise Emmons.

