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Galictis cuja.

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Galictis cuja (Molina, 1782)

Lesser Grison

Mustela cuja Molina, 1782:291. Type locality "Chili." First restricted to "S. Chili (Temuco)" by Thomas (1912:46), then to "alrededores de Santiago" by Cabrera (1958:261).
Mustela quiqui Molina, 1782:292. Type locality "Chili." First restricted to "southern Chile" by Thomas (1912:46), then to "alrededores de Santiago" by Cabrera (1958:261).
Galictis vittata: Nehring, 1886:187. Name combination.
Grison cuja: Thomas, 1907:163. Name combination.
Grison furax Thomas, 1907:162. Type locality "San Francisco dos Campos, S. Minas Geraes. Altitude 1580 m," São Franscisco dos Campos, Minas Gerais, Brazil.
Grisonella melina: Thomas, 1921a:213. Name combination.
Grisonella huronax Thomas, 1921a:213. Type locality "Mar del Plata, S.E. Buenos Ayres," Buenos Aires Province, Argentina.
Grisonella ratellina Thomas, 1921b:215. Type locality "Pedernal, 1200 m," San Juan Province, Argentina.
Grisonella shiptoni Thomas, 1926:311–312. Type locality "Concepcion," Tucuman Province, Argentina.
Grison vittata: Krumbiegel, 1942:97. Name combination.
Galictis cuja: Cabrera, 1958:260. First use of present name combination.

CONTEXT AND CONTENT. Order Carnivora, suborder Caniformia, family Mustelidae, subfamily Mustelinae (Wozencraft 1993), tribe Galictini (Baskin 1998). *Galictis* and its relatives have been placed in subfamily Grisoninae (Pocock 1921) or Galictinae (Reig 1956). *G. cuja* has been placed in subgenus or genus *Grisonella* (Thomas 1912, 1921a). Four subspecies are recognized (Cabrera 1958):

G. c. cuja (Molina, 1782:291), see above. Restricted by Cabrera (1958:261) to the Santiago area, where Molina made his principal observations (*melina* Thomas, *melinus* Thomas, *quiqui* Molina, *ratellina* Thomas, and *shiptoni* Thomas are synonyms).
G. c. furax (Thomas, 1907:162), see above (*albifrons* Larrañaga, *brasiliensis* d'Orbigny, *huronax* Sanborn, and *vittata* Schreber are synonyms).
G. c. huronax (Thomas, 1921a:213), see above (*barbara* Hudson and *furax* Thomas are synonyms).
G. c. luteola (Thomas, 1907:163). Type locality "Chulumani, Bolivia, 67°W, 16°S. Alt. 1800 m."

DIAGNOSIS. *Galictis cuja* is relatively smaller than *G. vittata* (total length, 443–680 versus 600–760 mm, respectively; length of hind foot, 50–75 versus 66–97 mm; condylobasilar length, 64–84 versus 80–98 mm; width across canines, 13–19 versus 17–23 mm; body mass, 1.2–2.5 versus 1.5–3.8 kg), although both species vary geographically in size. Tail is proportionately longer in *G. cuja* (ca. 40% length of head and body) than in *G. vittata* (ca. 30%) and has more tail vertebrae (20–21 versus 17–18). Although dorsal color is variable in both species, tips of dorsal guard hairs and diagonal band are generally buffy to yellowish in *G. cuja* and white to gray in *G. vittata* (Yensen and Tarifa 2003). *G. cuja* lacks a distinct metaconid on m1, which is present in *G. vittata* (Thomas 1912).

Bacula of *G. cuja* and *G. vittata* are similar in shape, but shaft is shorter (41–47 versus 54–57 mm) and narrower (1–2 versus 2–3 mm), tip is proportionately shorter (5–6 versus 6–8 mm), and knobs are less prominent in *G. cuja* (Didier 1947; Justo et al. 1988; Mondolfi 1987; Pocock 1918).

The smaller Patagonian weasel, *Lyncodon patagonicus*, is similar to *G. cuja*, but top of head is white or creamy, throat and sides are dark brown rather than black, long white hairs are present on dorsum (Redford and Eisenberg 1992), feet are webbed only a short distance beyond the plantar pads, P2 and p2 are missing, and tympanic bulla is more inflated (Pocock 1921; Prevosti and Pardiñas 2001). Some *G. cuja* are very light-colored dorsally; a gray or cream-colored head is not always diagnostic of *Lyncodon*. *Mustela frenata* is smaller, with a brown dorsum and a light belly. *Eira barbara* usually has a solid, dark-colored body with a lighter head. Neotropical skunks have much longer legs, longer and bushier tails, and black backs with white markings (Reid 1997).

GENERAL CHARACTERS. *Galictis cuja* (Fig. 1) has a thin, elongate body with a long neck, narrow chest, short legs, and a short and bushy tail. Head is small and flat with short, broad, rounded ears. Top of head, back, sides, and tail are grizzled grayish "salt and pepper" due to black guard hairs with buffy tips. Face, throat, belly, and legs are solid black or sometimes grizzled but less so than dorsum. A diagonal, buffy, narrow stripe runs from forehead to shoulder and separates dorsal buffy or gray from ventral black, clearly demarcating dorsum from ventrum and giving the animal a striking gray or buff and black pattern. Fur is coarse, but undercoat is soft and short. Vibrissae and nose pad are black. Hairs on tail are long and lax. Legs are short and stout with 5 toes on each foot. Toes are webbed for ca. three-fourths of length and bear strong, short claws, which are curved and sharp. Heels are covered with hairs, but soles are naked (Cabrera and Yepes 1940; Mivart 1885; E. Yensen, in litt.).

Galictis c. cuja has a grayish diagonal stripe. Dorsal guard hairs have a gray, central portion and long (6–7 mm), off-white or gray tips, giving dorsum a lighter appearance than in other subspecies. *G. c. furax* has buffy or ochraceous buff in diagonal stripe and tips of dorsal hairs, but dark central portion of guard hairs is dark gray and relatively short. *G. c. huronax* has very pale-buff or off-white in diagonal stripe and tips of guard hairs and relatively more black in central portion compared with *G. c. luteola*, giving dorsum an even darker appearance. *G. c. luteola* has a buffy or cream-buff diagonal stripe. Central portion of dorsal guard hairs is black, and tips are shorter (4–5 mm) and cream-buff, making dorsum darker and buffier than in *G. c. cuja* (Thomas 1907, 1921a, 1921b; E. Yensen, in litt.).

Dorsal surface of skull is relatively flat (Fig. 2). Postorbital processes are short but pointed. Braincase is roughly V-shaped, with arcuate sides converging anteriorly, and postorbital breadth is less than half maximum width of braincase. Teeth are large and strong. M1 is narrow and transverse, ca. 3 times as wide as long, with lingual side slightly wider than labial side (Nehring 1886).

FIG. 1. *Galictis cuja* in Vesty Pakos Zoo, La Paz, Bolivia. Photograph by Carlos Capriles Farfán.

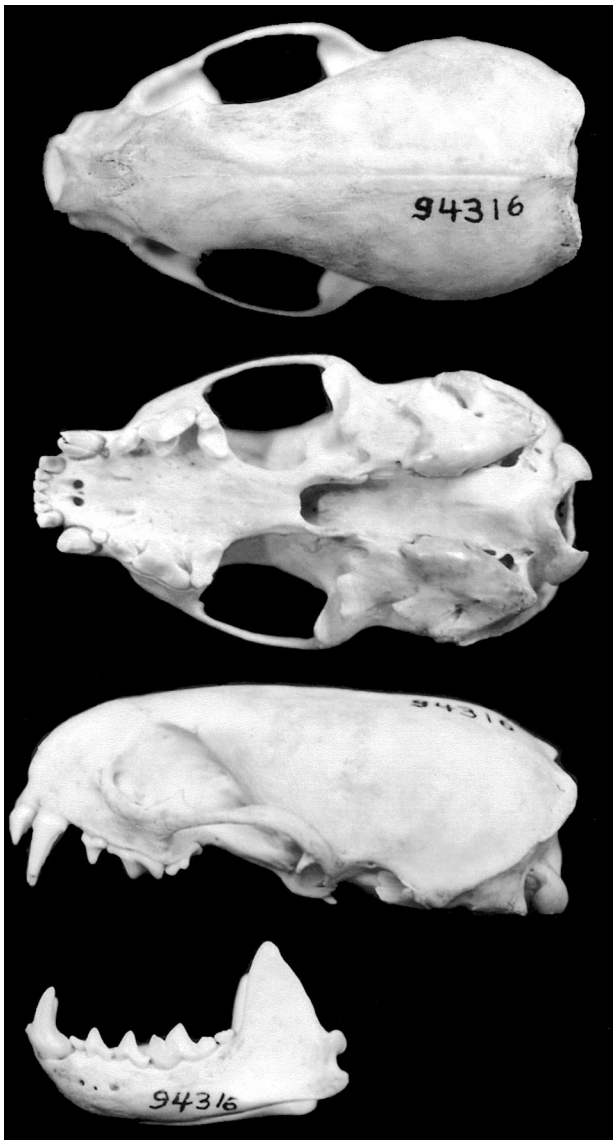

FIG. 2. Dorsal, ventral, and lateral views of cranium and lateral view of mandible of a subadult male *Galictis cuja furax* (Field Museum of Natural History 94316) from Primiero Morro, São Paulo State, Brazil. Condylobasal length is 71.0 mm.

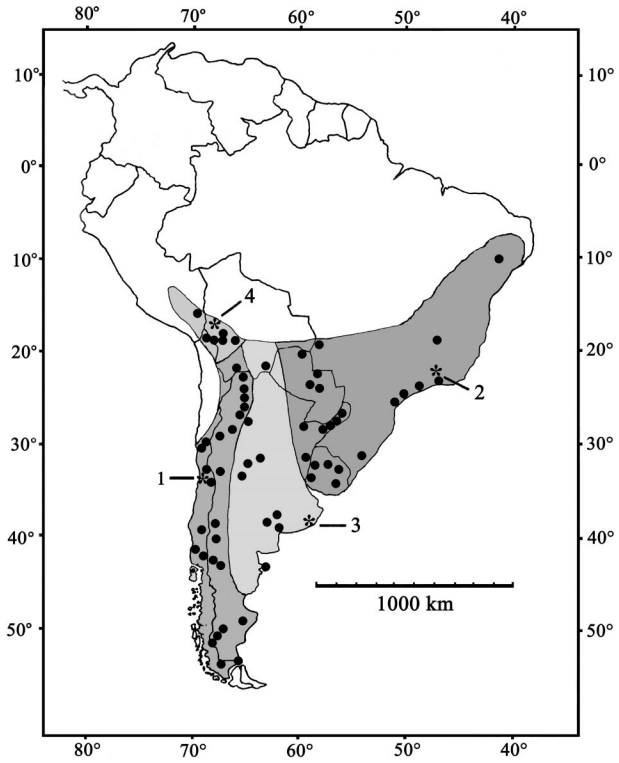

FIG. 3. Distribution of *Galictis cuja* in South America based on localities given by Anderson (1997), Barros et al. (1990), Eisenberg and Redford (1999), Krumbiegel (1942), Pine et al. (1979), Quintana et al. (2000), Redford and Eisenberg (1992), Texera (1974), and Willig and Mares (1989) and on specimens in American Museum of Natural History, Field Museum of Natural History, Museu Goeldi, Museo Nacional de Historia Natural de Chile, and National Museum of Natural History. Subspecies boundaries are approximate. Type localities are indicated with an asterisk: 1, *G. c. cuja*; 2, *G. c. furax*; 3, *G. c. huronax*; and 4, *G. c. luteola*.

Both a distinct metaconid on m1 and a well-defined cingulum on inner side of P3 are absent. More than 19 tail vertebrae are present (Husson 1978). Sexes are similar, but females are smaller, more slender, and lighter.

Measurements in the literature (Anderson 1997; Barlow 1965; Daciuk 1974; Greer 1965; Herter 1975; Krumbiegel 1942; Mares et al. 1989, 1996; Osgood 1943; Pearson 1957; Thomas 1907, 1912, 1921a, 1926; Wolffsohn 1923) are supplemented with those of additional specimens in the American Museum of Natural History, Field Museum of Natural History, National Museum of Natural History, and Museu Goeldi. External measurements were recorded from specimen tags; cranial dimensions follow Cockrum (1955). About equal numbers of males and females with teeth fully erupted were measured. Measurements (in mm; mean ± *SD*, with range and *n* in parentheses) are: total length, 562.1 ± 59.86 (443–680, 22); length of tail, 162.3 ± 17.65 (135–190, 21); length of head and body, 408.9 ± 49.38 (273–520, 20); length of hind foot, 61.0 ± 6.79 (50–75, 23); length of ear, 24.9 ± 3.49 (20–30, 12); basilar length of Hensel, 66.9 ± 4.6 (58.2–75.1, 25); condylobasilar length, 74.00 ± 5.45 (64.2–84.0, 36); palatilar length, 32.75 ± 2.53 (28.2–37.9, 22); postpalatal length, 33.15 ± 2.48 (29.4–36.8, 15); length of toothrow, 21.67 ± 2.89 (17.6–26.3, 25); zygomatic breadth, 41.70 ± 3.43 (34.2–48.0, 39); mastoid breadth, 37.65 ± 3.13 (32.3–43.5, 32); squamosal width, 32.35 ± 2.49 (28.7–36.7, 15); postorbital breadth, 16.83 ± 1.20 (15.1–18.9, 27); least interorbital breadth, 16.24 ± 1.69 (13.8–20.0, 33); postdental breadth, 8.16 ± 0.72 (7.1–9.3, 15); width across upper canines, 16.00 ± 1.58 (13.5–19.3, 31); maximum breadth of toothrow, 23.73 ± 1.99 (21.2–27.5, 15); length of auditory bulla, 19.68 ± 1.41 (18.0–21.8, 15); width of auditory bulla, 7.85 ± 0.79 (6.8–9.2, 15); and angular length of mandible, 43.42 ± 3.59 (37.6–50.5, 24). Body mass is 1,200–2,450 g ($\bar{X}$ = 1,580 g, n = 5—Redford and Eisenberg 1992) or 1,500–1,800 g ($\bar{X}$ = 1,670 g ± 125 *SD*, n = 4—E. Yensen, in litt.).

DISTRIBUTION. *Galictis cuja* occurs in southern Peru, western Bolivia, central Chile, Paraguay, Uruguay, Argentina, and east to southeastern Brazil (Fig. 3). In Peru, the species occurs at high elevations in the southern altiplano in Arequipa and Puno Departments (Pearson 1951; Pulido 1991). Records in Bolivia are from the Andean highlands (Anderson 1997; Yensen et al. 1994), east slopes of the Andes (Emmons 1997; Thomas 1907), and southeastern portion of the country (Cuéllar et al. 1997). The species occurs at high elevations in northern Chile (*G. c. luteola*) from Arica southward and from sea level to 3,800 m in central Chile (*G. c. cuja*) from Coquimbo to Valdivia provinces (Mann 1945; Osgood 1943; Pefaur 1969; Quintana et al. 2000). Two records from the Magallanes Region of southern Chile (52°S—Texera 1974) were questioned by Redford and Eisenberg (1992), but Texera's (1974) measurements, dental formula, and description match *G. cuja* better than *Lyncodon*. *G. cuja* occurs south throughout Uruguay (Barlow 1965; Langguth and Anderson 1980) and Argentina (Mares et al. 1996; Olrog and Lucero 1980) to more than 50°S (Perito Moreno Glacier—Heinonen Fortabat and Chebez 1997; Massoia et al. 1993; F. J. Prevosti, in litt.). In Paraguay, it is found in the xeric Chaco (Brooks 1991, 1993) and probably throughout the country.

In Brazil, *G. cuja* reaches as far northeast as Perambuco state (Willig and Mares 1989).

FOSSIL RECORD. *Trigonictis* arrived in the New World in mid-Pliocene and was common in North American Blancan age deposits (Kurtén and Anderson 1980). *Trigonictis* differs little from *Galictis*; it may be congeneric (Reig 1957) or directly ancestral (Kurtén and Anderson 1980). Alternatively, *Trigonictis* was about equally similar to *Galictis* and *Eira* (Ray et al. 1981). *Sminthosinus bowleri* was closely related to *Trigonictis*, possibly as a subgenus of the latter (Galbreath 1972). At Hagerman, Idaho, *Sminthosinus* occurred in marshy habitats, probably fed on *Ophiomys* voles, and possibly was the ancestor of *G. cuja* (Bjork 1970).

Galictis arrived in South America during the Marplatan (Vorohuean subage) and occurred throughout the subsequent Ensenadan, Lujanian, and Recent land-mammal ages (2.5 million years ago to present—Cione and Tonni 1995; Webb 1985). *Galictis* (*Grisonella*) *hennigi* from Argentina (Mones 1986) is known from a single specimen, now lost, and may not be distinguishable from *G. cuja* (F. J. Prevosti, in litt.). *G. cuja* has been found in archeological sites at Cueva de Milodón (51°35′S, 72°38′W), Magallanes, Chile (originally identified as *L. patagonicus*); Chenque Haichol, Argentina (38°35′S, 70°40′W—Massoia 1992); Cueva Tixi, Buenos Aires Province, Argentina (Mazzanti and Quintana 2001); El Manantial, Rio Negro Province, Argentina (F. J. Prevosti, in litt.); and Cueva III de Huachichocana, Jujuy Province, Argentina (ca. 1,420 years BP—Fernández Distal 1986).

FORM AND FUNCTION. Contrasting black and white markings are strongly correlated with noxious anal secretions (Ortolani and Caro 1996). The pungent odor from those of *G. cuja* was said to be stronger than that of skunks (Aplin 1894), but this is probably incorrect from our experience, from that of an anonymous reviewer, and by analogy with the very similar *G. vittata* (Bell 1841; Dalquest and Roberts 1951; Mendez 1970). Anal glands become active only when the animal is very excited (Herter 1975).

Guard hairs have nonoverlapping, irregular, transverse-elongate, cuticular scales. Medullary portion of hair has unique, irregular, transverse vesicles (Chehébar and Martín 1989). Nose projects anterior to mouth and lacks a median groove (Mivart 1885). Rhinarium is variable, but dorsal surface is evenly convex, and a shallow groove is present on the lower anterior face of nose pad. Nares are narrow and scroll-like, with widely separated openings. Pinnae are well developed with a small bursa present in front of posterior margin, an upper membranous flap, a valvular supertragus, and a posterior flap that is continuous with margin of pinna, both above and below (Pocock 1921). Tongue has small, flattened, but elongate and conspicuous, pyriform papillae (Mivart 1885). Dental formula is i 3/3, c 1/1, p 3/3, m 1/2, total 34 (Husson 1978; Mares et al. 1989).

Brain mass averaged 15.03 g (Gittleman 1986). Total volume of cerebral cortex of an animal weighing 1.19 kg was 17.944 cm^3. Volume (cm^3) of various parts of the brain was: telencephalon, 13.518 (neocortex, 10.726; olfactory bulb, 0.339); diencephalon, 1.030; mesencephalon, 0.561; cerebellum, 2.035; and medulla oblongata, 0.800 (Thiede 1973). Convolutions of the cerebrum differ from those of *Eira*; junction of calloso-marginal and crucial sulci separates hippocampal gyrus from sagittal gyrus (Mivart 1885).

Locomotion is semiplantigrade (Mivart 1885). Feet are adapted for running and climbing rather than digging or swimming; soles are naked, and toes have short, curved claws. Webbing between toes extends to proximal ends of somewhat heart-shaped digital pads. Plantar pads are large, 4 lobed, blunt in front, roughly triangular but somewhat oblique behind, and narrowly separated from large carpal pads (Mivart 1885; Pocock 1921).

Tracks typically have 5 toes with short claws on both front and hind feet. However, thumb is small and may not be visible if tracks are shallow. Web between toes is clearly visible in tracks on soft substrates. Tracks of trotting animals frequently are partially or completely superimposed, but forefeet are slightly larger than hind feet. Pads are clearly demarcated and trapezoidal in shape. Toe marks are elongated ovals and well separated (Becker and Dalponte 1991). Tracks could be confused with those of *G. vittata* or tayras because they are similar in shape and webbed, but those of *G. cuja* are smaller (<4 cm across).

Calcanea of *G. cuja* are smaller than those of *G. vittata* but remarkably similar in shape to those of African *Poecilictis lybica*. A well-developed, usually ungrooved, trochlear process reaches distal end of calcaneum. A large sustentaculum and smoothly curved posterior and large medial articular surfaces are present, as well as a distinct shelf between medial articular surface and distal end of calcaneum and a raised area on mediodorsal edge of cuboid surface (Stains 1976).

Baculum of *G. cuja* is 41–47 mm long and 1–2 mm in diameter, with a downwardly inflected (at ca. 140°) spatulate tip 5–6 mm long and 2–3 mm wide. Shaft is swollen at base and becomes progressively thinner toward apex. It is straight or with a slight, variable curve and is triangular in cross section. Dorsal surface of tip has a partially covered channel passing posteriorly to shaft, and ventral surface is flat. A pair of dorsoposteriorly directed knobs are located near neck of shaft (Didier 1947; Greer 1965; Justo et al. 1988; Mondolfi 1987; Pocock 1921). Anal area lacks a subcaudal pouch, and area between anus and vulva is naked (Pocock 1921). Four pairs of mammae (Thomas 1907) include 1 inguinal and 3 abdominal pairs (E. M. González, pers. comm.).

A captive male weighing 1,225 g with access to unlimited food ate up to 444 g/day, and its mass eventually reached 1,700 g. It excreted 74–177 cm^3 urine daily while on a meat diet and 5–10 cm^3 while fasting. Fecal weight varied from 8 to 31 g while on a meat diet. The animal lost 341 g in 6 days of forced fasting. Cations in the urine varied from 80.7 to 97.5 milliequivalents per liter for sodium and 16.0 to 29.8 milliequivalents per liter for potassium (Greer 1965).

ONTOGENY AND REPRODUCTION. *Galictis cuja* may be monogamous; pairs hunt together when young are being raised (Quintana et al. 2000). Litter sizes are 2–5 (Quintana et al. 2000). A juvenile (200 g) was found in La Paz, Bolivia, in May (Anderson 1997), and juveniles were seen in August in Paraguay (Brooks 1991) or in October (Herter 1975). Young may be precocial (Oliver S. 1946).

ECOLOGY. *Galictis cuja* occurs in a variety of habitats from sea level to >4,200 m. It frequently occurs near water (Mares et al. 1989; Pine et al. 1979) but also may be abundant in open habitats (Mares et al. 1989). Habitats include seashore, arid scrub, chaco desert, Gran Chaco, Chiquitano woodland, open thorn woodland, cerrado, caatinga, savanna, savanna peripheries in the central Paraguayan chaco, steppes, evergreen shrublands, semideciduous lower montane forest, brushy areas below timberline, Tucuman-Bolivian woodlands, wet forest, Brazilian Atlantic forest, high Andean shrublands, *Polylepis* woodlands, puna grasslands, marshes, high-elevation wet meadows (= bofedales), *Equisetum*-dominated scrub, overgrazed pastures, and agricultural areas of the pampas (Anderson 1997; Barlow 1965; Brooks 1991; Christie 1984; Cuéllar S. 1997; Cuéllar and Noss 1997; Daciuk 1974; Ebensperger et al. 1991; Emmons 1997; González 1996; Greer 1965; Heinonen and Bosso 1994; Mann 1945; Mills et al. 1994; Miserendino et al. 1998; Morales 1994; Olrog 1979; Osgood 1943; Palerm 1950; Pearson 1951; Redford and da Fonseca 1986; Salazar 1990; Tamayo and Frassinetti C. 1980; Willig and Mares 1989; Yensen et al. 1994). Most localities in Bolivia were between 2,000 and 4,200 m (Anderson 1997). It is relatively rare in most habitats. Of 638 mammals recorded in 146 km of transects in Gran Chaco in Bolivia, only 1 was *G. cuja* (Cuéllar and Noss 1997).

Lesser grisons live in hollow trees, crevices, boulder piles, burrows of other animals (Mares et al. 1989), or burrows at the base of *Polylepis* trees (Salazar 1990); among tree roots and rocks (Ferriolli Filho and Barretto 1969); or in banks adjacent to wet meadows at high elevations in Bolivia (Yensen and Tarifa 1993). Four or 5 individuals may occupy a burrow system (Ebensperger et al. 1991; Greer 1965; J. Rau, in litt.). One burrow system occupied by 5 individuals in Chile was on a 30° slope among rocks and roots of a *Guevina avellana* tree in *Nothofagus obliqua* woods. Leaves of *Greiga* obscured the entrances. One of 3 adjacent entrances was 36 cm wide by 20 cm high; 1 m inside the entrance the tunnel was 15 cm in diameter (Greer 1965). Burrows may reach 4 m in depth (Quintana et al. 2000).

Galictis cuja feeds principally on small to medium-sized vertebrates, especially rodents, lagomorphs, and birds, and also frogs, lizards, snakes and their eggs (Jiménez 1996; Mann 1945; Quintana et al. 2000). In central Chile, the diet consisted of 35.2% rodents (*Abrocoma bennetti*, *Abrothrix longipilis*, *Oligoryzomys longicaudatus*, *Phyllotis darwini*, *Octodon degus*, *Spalacopus cyanus*, and

Rattus rattus), 26.5% introduced European rabbits (*Oryctolagus cuniculus*), 20.7% unidentified mammals, 14.7% reptiles (*Liolaemus chiliensis* and *Philodryas chamissonis*), and 2.9% unidentified passeriform birds. Average prey mass was 350 g (Ebensperger et al. 1991).

In Patagonia, Argentina, the diet of *G. cuja* was examined at 3 sites: 1 without warrens of introduced European rabbits or hares (*Lepus capensis*), 1 with low density, and 1 with high density (Diuk-Wasser and Cassini 1998). When lagomorph warrens were not present, *G. cuja* fed mainly on murid rodents (46.3%) and also on lagomorphs (18.9%), lizards (17.9%), and birds (16.8%). As lagomorph density increased, their percentage in the diet increased up to 96.8%.

Lesser grisons frequently prey on cavies or guinea pigs (Caviidae). They are capable of running down and killing dwarf cavies (cuis chico, *Microcavia australis*) and are their major predators (Rood 1970). At a study site in Argentina, lesser grisons were initially seen in October 1966, and by February 1967, they were seen daily. By September, lesser grisons had nearly eliminated the study population of *Microcavia*.

In Brazil, *G. cuja* preyed on cavies, *Cavia* (Silva 1984), and they also hunt guinea pigs (*C. aperea*) in Uruguay (Barlow 1965, 1969). At Juli, Puno Department, Peru, *G. cuja* "were abundant in the stone walls nearby, and . . . preyed on the numerous guinea pigs" (*Cavia*—Pearson 1951:135). A lesser grison collected at 1600 h had 3 mice and 1 lizard in its stomach (Pearson 1957). Grisons eat skinks (*Mabuya frenata*) and frogs (*Leptodactylus chaquensis*) in Paraguay (Sunquist et al. 1989).

Grisons (reported as *G. vittata* but almost certainly *G. cuja*) were important predators of colonial nesting silver (*Podiceps occipitalis*) and Rolland's (*Rollandia rolland*) grebes in the marshes of Santa Fe Province, Argentina. Grisons eat grebe eggs; 1 grison was documented killing 3 adult grebes in 1 day, and in several instances, they caused abandonment of the colony (Burger 1984). They also feed on eggs of South American terns (*Sterna hirundinacea*) in Chubut, Argentina (Blanco et al. 1999).

Galictis cuja had a significant ($\alpha = 0.68$) niche overlap with Andean foxes (*Pseudalopex culpaeus*) in central Chile but much less overlap ($\alpha = 0.28$) with barn owls (*Tyto alba*). Niche breadth for *G. cuja* was significantly smaller (3.9) than for the other 2 species (5.3 and 5.5, respectively). Andean foxes ate invertebrate and plant material at this site, whereas *G. cuja* consumed no invertebrates, and only 1 scat had plant material (fruit of *Cryptocarya alba*). The niche of *G. cuja* was included within the niche of *P. culpaeus*, and *G. cuja* consumed larger prey than is expected based on its body mass (Ebensperger et al. 1991).

A sacrificial burial of a tame lesser grison was found associated with a human internment dated 1,420 years BP in Huachichocana Cave, Argentina. The grison was wearing a braided wool collar supporting a seed (*Juglans australis*) rattle. Its body was buried on a camelid pelt and surrounded by seeds of Cucurbitaceae and *Prosopis nigra*, ears of corn, bodies of mice (Cricetidae), camelid bones, leaves, branches, and carefully placed funerary vases (Fernández Distal 1986).

Tame *G. cuja* was used until modern times in Argentina (Cajal 1991), Bolivia (Lopez Rivas 1954; Yensen and Tarifa 1993), Chile (Jiménez 1996; Osgood 1943), and Peru (Pearson 1951) to enter crevices and burrows of chinchillas (*Chinchilla brevicaudata* and *C. lanigera*) and drive them out where they could be killed by hunters or trained dogs; however, this practice ceased with the virtual extinction of chinchillas in the wild. Young lesser grisons are still commonly tamed and used to kill other rodents in Argentina (Fernández Distal 1986; Mares et al. 1989). In Paraguay, the species is important to farmers because of the granivorous rodents it eats, and in some areas, it has been kept to control rodent populations. However, despite their value in controlling granivorous rodents, they were blamed for eating poultry and were persecuted (Brooks 1991). In Malleco Province, Chile, they reportedly do not attack poultry or livestock (Greer 1965), although they are nest predators and are blamed for killing chickens elsewhere (Ferriolli Filho and Barretto 1969; Quintana et al. 2000). In Paraguay, they are sometimes hunted for sport in a manner similar to European ferreting (Brooks 1991).

A variety of parasites have been recovered from *G. cuja*. An ixodid tick *Amblyomma ovale* has been reported in Brazil (Sinkoc et al. 1998). Infection by giant kidney worms (*Dioctophyme renale*) in Brazil was confirmed in 2 cases. Lesser grisons hosted 1–8 worms; the largest of these nematodes was 410 mm long and 88 mm in diameter (Barros et al. 1990). *G. c. furax* was host to several nematodes (*Cruzia*—intestine, *Dirofilaria*—subcutaneous, *Gnathostoma spinigerum*—stomach, *Lagochilascaris*—intestine, unidentified Oxyuridae—intestine, and unidentified Trichostrongylidae—intestine) in the Chaco Boreal of Paraguay (Seesee et al. 1981).

Galictis cuja can be a reservoir for Chagas' disease. In Santiago del Estero Province, Argentina, the only *G. cuja* trapped was infected with *Trypanosoma cruzi* (Wisnivesky-Colli et al. 1992), and *T. cruzi* was recovered from 2 of 14 lesser grisons in São Paulo State, Brazil. *T. cruzi* from the latter was inoculated into white mice (*Mus musculus*). Parasite counts in daily blood samples were low (140–966 *T. cruzi*/mm^3; only 4 mice had >500 *T. cruzi*/mm^3), and no mice died as a result of exposure (Ferriolli Filho and Barretto 1969). The only *G. cuja* trapped in a survey of Junin virus in Santa Fe Province, Argentina, was the 1st carnivore ever to test seropositive (Mills et al. 1994).

Lesser grisons are killed on roads. In El Palmar National Park, Argentina, the mortality rate (2 of 176 carcasses found) was relatively low (Cómita 1984). However, in central Brazil, *G. cuja* was the 5th most frequent mammal species found dead on roads, comprising 6.1% of the total ($n = 730$—Vieira 1996).

BEHAVIOR. *Galictis cuja* is noted for its ferocity, as indicated by popular Chilean expressions for an aggressive or fierce person: estar como quique (to be like a grison), malo como kike (mean as a grison), se puso como un kike (became like a grison—Cabrera and Yepes 1940; Campos C. 1985; Oliver S. 1946). One lesser grison surprised by 3 dogs in Uruguay was able to hold them at bay (Palerm 1950). Despite their fierceness, they tame easily when young (Aplin 1894; Campos C. 1985; Herter 1975; Oliver S. 1946).

Lesser grisons are active during the day (Herter 1975; Mann 1945; Perovic 1998) but also hunt at dusk (Rood 1970) and may be nocturnal (Ferriolli Filho and Barretto 1969; Quintana et al. 2000). *G. cuja* tends to be solitary but is also found in small groups (Mann 1945; Mares et al. 1989). Lesser grisons may be monogamous and live in families (Campos C. 1985). Young may learn to hunt from their parents (Oliver S. 1946). A group of 5, including an adult male, an adult female, and 3 subadults, was seen in late winter (1 August—Brooks 1993). They hunt in groups of 3–5 individuals (Aplin 1894); 1 group of 3 adults walked in single file (C. Quiroga, in litt.). Family groups of lesser grisons move rapidly in single file (Mann 1945), giving rise to a Chilean folk belief in the culebrón (giant snake), a large, thick, furry snake with several legs, running rapidly through the grass (Campos C. 1985).

Hunting behavior may rely on olfaction. In Uruguay, a guinea pig (*C. aperea*) was moving uphill among clumps of bunchgrass. A lesser grison also began moving up the hill in a zigzag course, apparently searching for the scent trail. When it crossed the guinea pig's path, the grison started straight for the *Cavia* and increased its speed, although neither animal had yet seen the other. The 2 animals collided, and the alarmed *Cavia* fled downhill and disappeared, with the *G. cuja* ca. 15 cm behind (Barlow 1965, 1969).

Two captive grisons (probably *G. cuja*) from Espírito Santo, Brazil, reacted to a series of snake species introduced into their enclosure by cautiously attacking and biting the head or neck preferentially. The grisons were confused by snake species that gave tail displays in which the tail simulated the head, and they usually shifted their attack to the less vulnerable tail (Jackson 1979).

A female lesser grison played with live prey (mice or grasshoppers) for 4–45 min after their capture (Dücker 1968). Mice were grasped with the mouth without damage and rolled over with the paws, shaken like a doll, or flung to the side or over the back, then pursued and recaptured, brought back, and the behavior repeated. At times, this was done while the lesser grison was lying on its back, and it would fling the mouse up in the air and then grab it. Sometimes, it would bite the prey cautiously and then toss it again. It also played with dead prey, much like a domestic cat. Claws were not used, and prey were not punctured during play. Prey were eaten while the lesser grison was lying on its belly with the mouse in its paws or lying on its side or back. The lesser grison would hold the prey in its hand somewhat like a banana and chew on the head first, then take successive bites without letting go. The entire mouse was eaten, including skin and bones. When playing with a human hand, the lesser grison did not bite (Dücker 1968).

The same captive lesser grison played in water and often used its front paws to splash its water dish empty. It would bathe by splashing water on its body parts, cleaning all parts of the body, including the genitals. It dried by shaking and rubbing (Dücker 1968).

A group of a dozen grisons played in viscacha (*Lagostomus*) dens, running and jumping over the burrow entrances, almost crashing into each other, and then rapidly changing directions without touching. On seeing the observer, they darted into the burrows and then reappeared, growling and gnashing their teeth (Cabrera and Yepes 1940).

CONSERVATION STATUS. The International Union for Conservation of Nature does not consider *G. cuja* to be of global conservation concern (Hilton-Taylor 2000; IUCN 1996; Schreiber et al. 1989), although its status varies by country. In Argentina, it is considered "not threatened" in Nahuel Huapi National Park and Reserve (Úbeda et al. 1994) or nationally (Reca et al. 1996) but in critical need of protection on the Valdés Peninsula, Chubut Province (Daciuk 1974), and "potentially threatened" (Díaz and Ojeda 2000). In Bolivia, all fauna have been protected from hunting, harassment, and removal from the wild since 1990 (Decreto Supremo de Veda Indefinida 22641—Tarifa 1996), but *G. cuja* is not otherwise of conservation concern. Taxidermy specimens occasionally are offered illegally for sale in the Witches' Market in La Paz. Their skins are stuffed with wool, bright yarn is attached to the ears, and coils of serpentine paper are wrapped around the body. Such decorated specimens are kept for many years for use in ritual offerings to Pachamama (Mother Earth) during religious folk festivals (E. Yensen and T. Tarifa, in litt.). In Chile, *G. cuja* has been protected from hunting and commercialization since 1929 (Iriarte and Jaksic 1986), and this was extended in 1972 by Decreto 40, but hunting and collecting are legal under permit (Fuller et al. 1987). It was not considered to be of conservation concern in Chile in the 1980s (Miller et al. 1983; Patterson and Feigl 1987) but was listed as vulnerable by Glade (1993). They are currently considered data deficient in Regions II and III and vulnerable in the other regions of Chile (Quintana et al. 2000). They are of indeterminate status or threatened in the Paraguayan chaco (Brooks 1991). In Peru, *G. cuja* is considered "indeterminate" (Resolución Ministerial 1082-90-AG—Fuller et al. 1987) and is protected in Reserva Nacional Salinas y Aguada Blanca (Pulido 1991).

REMARKS. A partial taxonomic history of *G. cuja* (referred to as *G. vitatta*) is given by Devincenzi (1935). Because of confusion over types and similarity between the 2 species, many authors have confused the 2 species, and some used *G. vittata* for modern *G. cuja* and *G. allemandi* for *G. vittata* (e.g., Devincenzi 1935; Didier 1947; Krumbiegel 1942; Nehring 1886). Older literature should be read with caution, especially in Brazil where the 2 species are sympatric.

The generic name *Galictis* may originate from the Latin word *gale* meaning weasel or cat and the Greek *iktidos* meaning weasel (Jaeger 1966). The specific epithet *cuja* comes from cuya, a name for the animal in Chile (Thomas 1912) and Peru (Pacheco et al. 1995). Other common names include yaguagumbé (Argentina—Massoia et al. 1985); juruna, hurón menor (Bolivia—Anderson 1997); ñaguaruape (Guaraní); furão (Brazil—Thomas 1912); cachorrinho do mato, furax (Brazil—Cunha Vieira 1955); quique, kiki, hurón (Chile—Campos C. 1985; Osgood 1943); perro de monte (Peru—Grimwood 1969); and little grison, minor grison.

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