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Dromiciops australis.

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Dromiciops Thomas, 1894

Dromiciops Thomas, 1894:186. Type species *Dromiciops australis* by monotypy.

CONTEXT AND CONTENT. Order Marsupialia, Superfamily Didelphoidea, Family Didelphidae, Subfamily Microbiotheriinae. The genus *Dromiciops* includes only one living species, *Dromiciops australis*.

Dromiciops australis (Philippi, 1893)

El Monito del Monte, Llacas, Colocolos, Kongoy-Kongoy, Comadrejita Enana

Didelphys australis Philippi, 1893*a*:31. Type locality near Unión, Valdivia Province, Chile.

Dromiciops gliroides Thomas, 1894:187. Type locality at Huite, near Ancud, northeastern Chiloé Island, Chile.

CONTEXT AND CONTENT. Context noted above. Two subspecies are recognized as follows:

D. a. australis (Philippi, 1893*a*:31), see above.
D. a. gliroides Thomas, 1894:187, see above.

The holotype of *D. a. australis* is in the Museum in Santiago where it was examined by W. H. Osgood in 1923 (see Osgood, 1943:49). It was found to be in fairly good condition. The skull was inside the skin and perhaps nearly or quite entire. In addition to the holotype, there are at least three other specimens in the Chilean museum, one adult and two immatures (Osgood, *op. cit.*).

The holotype of *D. a. gliroides* (BM 92.5.9.3, an aged male preserved as a skin and skull) was obtained in 1868 by Dr. R. O. Cunningham, who referred to it under the name *Didelphys elegans* (Cunningham, 1871:362). It is now in the British Museum (Natural History), London (Osgood, 1943:50).

The two subspecies of *Dromiciops australis* were formally recognized by Osgood (1943). He noted (p. 50) that a Chiloé Island specimen of *D. a. gliroides* (two specimens were then known) was "noticeably darker and shorter-tailed than specimens from the mainland, indicating at least subspecific distinction. The under parts especially are darker, and the tail, which in [*D. a.*] *australis* is usually somewhat lighter below, is wholly dark."

DIAGNOSIS. General proportions as in species of *Marmosa*. The body fur is silky, short, and dense. Ears are short, rounded, and covered with short hair; their anterior basal prominence is little developed. The backs of the ears are covered basally with thick fur similar to that of the crown, and terminally with thin yellowish hairs; they present a great contrast to the large and practically naked ears in species of *Marmosa*.

The tail is thick basally and tapers rapidly and evenly to the tip. The basal third of the tail is thickly clothed with shining fawn-colored fur resembling that of the body. Its terminal two thirds are almost equally well clothed, but the hairs are straighter and nearly uniformly dark brown. Below the hairs are brownish-white throughout. The naked part of the tail is confined to a narrow strip 25 to 30 mm long on the underside of the tip.

The hands and feet are large and more massive than in species of *Marmosa*. The limb bones are proportionately shorter, wider, and more robust permitting slow, intense, and ponderous movements (Mann, 1955:162). The fourth toe of the hind foot is the largest; 2, 3, and 5 are shorter; and 1 is the shortest of all. Soles of hind feet have five prominent transverse striated pads (plantar tubercules)—one across the base of the hallux, three at the bases of toes two through four, and a fifth (the smallest) pad along the postero-external border. The large terminal digital pads, which are longitudinally striated, extend beyond the claws.

The female has a small but distinct abdominal pouch with four mammae. The scrotum is shortly pedunculate and covered with rufous hairs, identical to those that appear over the marsupium region in the females (Mann, 1958:209).

The skull has a large rounded braincase and a short muzzle (figure 1). Interorbital region is broad; no trace of distinct temporal ridges, postorbital processes, or a sagittal crest. Broadest point of palate is at anterior edge of M3. Premaxillae are greatly elongated as in species of *Microbiotherium* (notable development of precanine region of rostrum). Posterior nares are broad, their mesial septum continues backward as a narrow ridge along the base of the skull. Nasals are expanded posteriorly. Paroccipital process is absent. Postglenoid process of squamosal is small, extremely short, and anteriorly slightly concave. The exceedingly inflated bullae are formed anteriorly by the tympanic process of the alisphenoid, posteriorly by an equally inflated entotympanic. The ectotympanic is enclosed by the bulla and forms a recess meatus only; there is no open space on the ventral side of the bulla. The bulla, tympanic, and malleus are all highly specialized. A posterior carotid foramen appears to be lacking (Patterson, 1965:7).

Line of upper incisors is more semicircular (U shaped) than in species of *Marmosa*. Upper and lower incisors are broad and spatulate (lowers are splayed outward). The first incisors are separated from each other by a small diastema. Canines are short; the upper one not reaching a line drawn from the tip of P3 to that of I1, and the lower one also scarcely higher than the last premo-

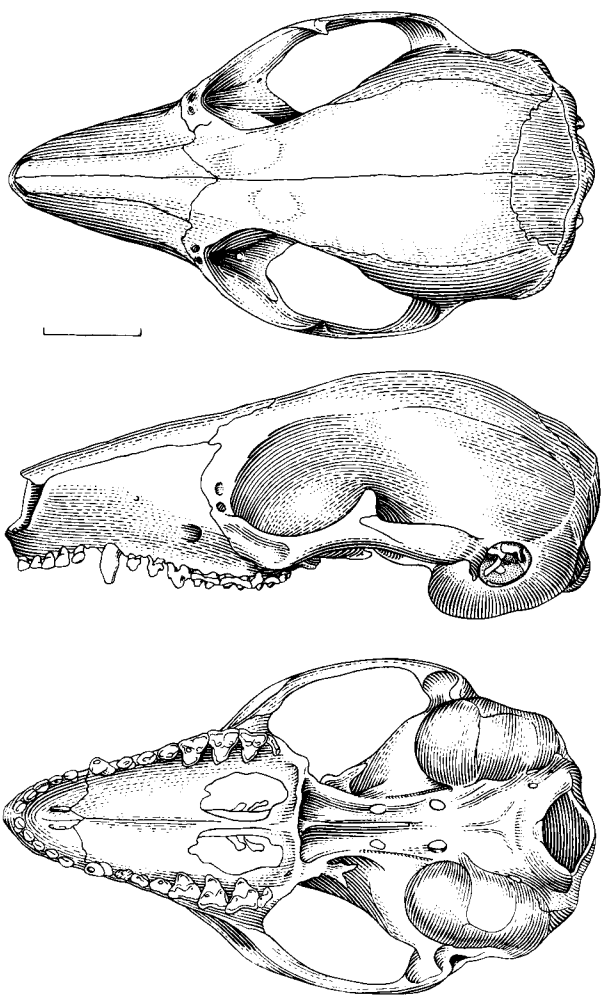

FIGURE 1. Skull of *Dromiciops australis* (AMNH 92147, female, from Lota, Concepción Province, Chile) shown, from top to bottom in dorsal, lateral, and ventral views. Scale represents 5 mm.

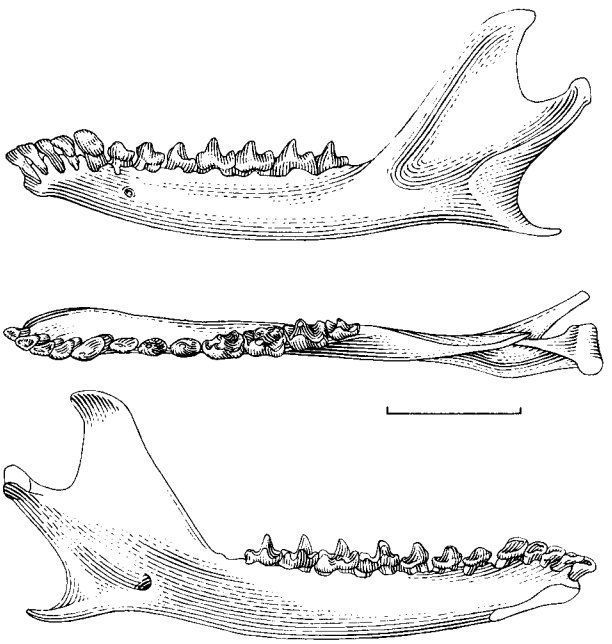

FIGURE 2. Lower jaw of *Dromiciops australis* (AMNH 92147) shown, from top to bottom in lateral, occlusal, and medial views. Scale represents 5 mm.

lar. The two anterior upper premolars are subequal in size, and smaller than the posterior one; below, the premolars increase gradually in size from p1 (smallest) to p3 (largest).

Lower jaw has the anterior part of each ramus splayed outwards, and an unusually short symphysis (figure 2). Lower molars show a slight reduction in size from m1 to m3 (figure 2). On m1–3 the talonid is basined and well developed relative to the trigonid. Trigonid is proportionately lower than in *Marmosa*. The three trigonid cusps are more even in size than in *Marmosa*, although the paraconid is always slightly smaller than the metaconid. The m4 is much reduced (much as in caenolestids), the reduction being most marked in the talonid, which is narrow and unicuspate.

Upper molars become progressively narrower in anteroposterior diameter from M1 to M3 (figure 3). The upper molar row is arcuate and not linear as in *Marmosa*. Protocone is relatively larger than in *Marmosa*. Metacone is only slightly larger than paracone (except on M4). Both cusps are located toward the external edge of the crown. A distinct metastylar expansion is lacking (only slightly developed on M3). Stylar shelf is greatly reduced and of nearly equal width throughout; stylar cusps are very weak. The M4 is greatly reduced (essentially rudimentary); its crown is similar to that of M1–3, except that the metacone has a more medial position (Walker *et al.*, 1968:17; Segall, 1969*a*:189; Thomas, 1894; Cabrera, 1919:30; Cabrera and Yepes, 1960:46; Philippi, 1893*a*, 1893*b*; Wolffsohn, 1913).

GENERAL CHARACTERS. According to the description and measurements given by Philippi (1893*a*, 1893*b*), the tail of *Dromiciops australis* does not surpass the combined length of the head and body. However, in some specimens studied by Gollan (1946:192) the tail is of greater length than the head and body together. The tail is moderately prehensile and its pelage, although shorter, is denser than in *Marmosa* (Osgood, 1943:49). The presence of fur on the tail of *Dromiciops*, and *Glironia*, is probably a secondary rather than a primitive character and is perhaps correlated with a decrease in the use of the tail as a prehensile organ (Tate, 1933:15).

General color above is a fawn-gray, the dorsal area is decidedly darker than the sides. The face is colored as in *Marmosa elegans*, that is, pale gray, with distinct black rings around the eyes. Crown and nape of neck are rufous brown or cinnamon, the sides of the body where the hairs have prominent subterminal white rings are paler. Similarly, large whitish patches occur on the sides of the body just behind the shoulder, in front of the shoulder, and just behind the hips. The whole animal, when viewed from the side, presents an alternation of light and dark areas, with the whitish cheeks followed by a darker color below the ears, then paler on the sides of the neck, and darker on the shoulder, center of the belly, and hips; each of these parts being separated from the others by paler areas. The dark of the shoulder is united above to that of the back, but that of the hips is separated by a narrow, longitudinal, light line passing approximately along the pelvic bones. These variations in color are in no case conspicuous or sharply defined. However, the appearance is suggestive of the more distinctive color pattern of *Chironectes*. The belly is a dirty yellowish white; the gray of the bases of the hairs shows through. The outer sides of the limbs and backs of the hands are brown; the inner sides of limbs and backs of hind feet are dull white.

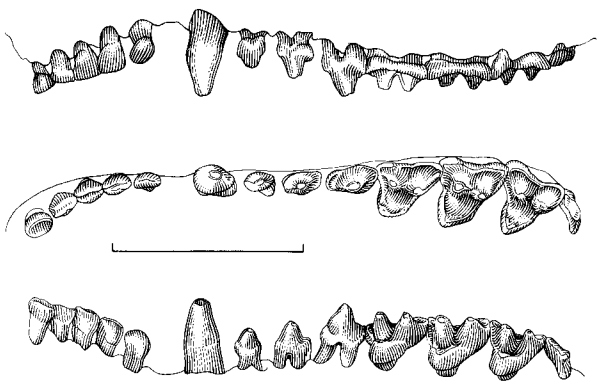

FIGURE 3. Detail of left upper dentition of *Dromiciops australis* (AMNH 92147) shown, from top to bottom in lateral, occlusal, and medial views. Scale represents 5 mm.

Adults caught in the Cordillera de Nahuelbuta average slightly larger in several measurements, especially in length of head and body, than specimens of similar age taken in the Cordillera de los Andes (see table 8 in Greer, 1965). There are no significant color differences between skins from these two mountainous areas (Greer, 1965:103).

The following ranges of measurements (in mm, except weight) are from Mann (1955:159, data for eight specimens), Gollan (1946:192, data for six to seven specimens), and Greer (1965: 104, data for 23 to 26 specimens), and all are referable to *D. a. australis*: weight, 16.7 to 31.4 g; total length, 195 to 246; length of head and body, 83 to 130; length of tail, 90 to 132; length of hind foot, 15 to 20; length of anterior foot, 9 to 10; height of ear at notch, 17 to 20; height of ear at crown, 12 to 16; condylobasal length of skull, 23.6 to 27.9; zygomatic breadth, 14.4 to 16.4; mastoid breadth, 11.5 to 12.6; least interorbital breadth, 4.5 to 5.1.

Measurements for the type of *D. a. gliroides* (BM 92.5.9.3) given by Thomas (1894) are as follows: combined head and body length, 126; length of tail, 102; length of hindfoot, 18; ear (at notch), 14; basal length of skull, 26; greatest breadth of skull, 16.8; nasal length, 11.1; greatest nasal breadth, 4.4; least nasal breadth, 1.9; interorbital constriction, 5.3; length of palate, 14; breadth outside M3, 10; M1–3 length, 4.6; m1–4 length, 5.8.

The above summary of general characters is compiled from Thomas, 1894:187; Osgood, 1943:48; Mann, 1955:164; Cabrera and Yepes, 1960:46; and Walker *et al.* 1968:17.

DISTRIBUTION. *Dromiciops australis* occurs only in south-central Chile, from Concepción south to Chiloé Island, and east to slightly beyond the Argentine border in the mountains in the region of Lago Nahuel Huapí (figure 4). It occurs in the forested areas in the Cordillera de la Nahuelbuta and Cordillera de los Andes, above 360 meters in elevation and below tree line (Greer, 1965:103).

This species has been divided into two local races. The typical race, *D. a. australis*, inhabits the mainland and is found in the Valdivian forest district in south-central Chile, from Concepción Province south to Chiloé, and in the adjacent part of Argentina in the region of Lago Lácar and Lago Nahuel Huapí (Cabrera, 1957:5). Osgood (1943:49, map 3) reported specimens from Río Colorado (elevation 3000 feet), Malleco Province, where Sanborn obtained two adults and four half-grown young; four adults from the heavy humid forest area on the summit of the Sierra Nahuelbuta; and another specimen taken under similar conditions at Peulla at the eastern end of Lago Todos Santos. Three specimens in the British Museum (Natural History), London were recorded by Thomas (1919:212), two from Beatriz, Lago Nahuel Huapí, Argentina, and one from Temuco, Chile. Two specimens from Curacautin were recorded by Wolffsohn and Porter (1908) and another from Valdivia by Wolffsohn (1921:512). Gollan (1946) described specimens from the National Park of Nahuel Huapí, Argentina, and showed specifics of the distribution of this species in the Lago Nahuel Huapí region (his plate 3). Greer (1965:105–106) gave precise locality data for a large number of specimens in Malleco Province, Chile.

Dromiciops australis gliroides is found only on Chiloé Island. The type was taken at Huite, near Ancud in the northeastern part of Chiloé Island. A second imperfect specimen without skull was reported by Osgood (1943:50) to have been secured from a native at the village of Quellón.

Many zoologists regard the small range of this species as the relict of a formerly larger range (Krieg, 1924; Walker *et al.*, 1968:17). Mann (1955:159–160) hypothesized that when the southern forest receded post-glacially and was replaced by the bush-like "mattoral," which was inhabited by *Marmosa elegans*, there must have been a consequent decrease in abundance of the previously established *D. australis*. The trapping results of Greer (1965:104) indicate that *D. australis* may be more abundant in Malleco now than when Osgood and Sanborn traveled there in 1923, 1924, and 1939. There is more open land in that area today than previously. Greer (1965:104) trapped no *M. elegans* in Malleco Province, whereas 33 *D. australis* were obtained.

FOSSIL RECORD. On the basis of comparisons with the original description and illustrations of *Microbiotherium tehuelcum* by Sinclair (1906:410, pl. 62, fig. 7), Reig (1955) placed *Dromiciops* in the subfamily Microbiotheriinae, a group up till then only recognized from fossil taxa. Reig (1955) pointed out the swelling of the periotic (entotympanic of some authors, see below) and its participation in the formation of the bulla posteriorly in both *Microbiotherium* and *Dromiciops*. He also noted similarities in the development of the premaxilla and in the form of the incisors. Reig added that the living didelphids *Caluromys*, *Caluromysiops*, and *Glironia* agree more closely in dental structure and in some particularities of the skull with *Dromiciops* and *Microbiotherium* than with typical didelphines. Accordingly, he included these taxa in the Microbiotheriinae.

The auditory region of *Microbiotherium* is remarkably similar to that of *Dromiciops*. This similarity even extends to the presence of a well-defined, but relatively smaller oval-shaped area (middle compartment of bulla) behind the tympanic process of the alisphenoid in the antero-medial part of the entotympanic. The bulla of *Microbiotherium* is larger and more elongated anteriorly than in *Dromiciops* (Segall, 1969*b*:494).

The auditory regions of *Caluromys*, *Caluromysiops*, and *Glironia* resemble each other to a greater degree than any of them resemble this region in species of *Didelphis*, and are distinctly different from the region in *Dromiciops* and *Microbiotherium*. "In fact, as far as the auditory region is concerned the similarities with *Didelphis* are so close that I cannot agree with Reig (1955) who considered them specialized Microbiotheriinae rather than Didelphinae" (Segall, 1969*b*:497).

Biggers (1966) also included *Caluromys* in the Microbiotheriinae, although recent studies on the ear structure by Segall (1969*b*) do not support this allocation. In any event, the tympanic region of *Caluromys*, while distinct from that of *Dromiciops*, also shows little relationship to that of *Didelphis* (Reig and Simpson, 1972). Consequently, the apparent dental similarities between *Dromiciops* and *Caluromys* and its relatives may be due to convergence. Unfortunately, there is no information yet available on the structure of the reproductive organs or on the morphology and behavior of sperm in *Dromiciops*. These characters clearly separate *Caluromys* from most other didelphids (Hill and Fraser, 1925; Biggers, 1966; Biggers and Delamater, 1965; and Biggers *et al.*, 1965).

Among the Recent didelphids examined by Patterson (1965:7) only the microbiotheriines (*sensu* Reig, 1955) lack the posterior carotid foramen.

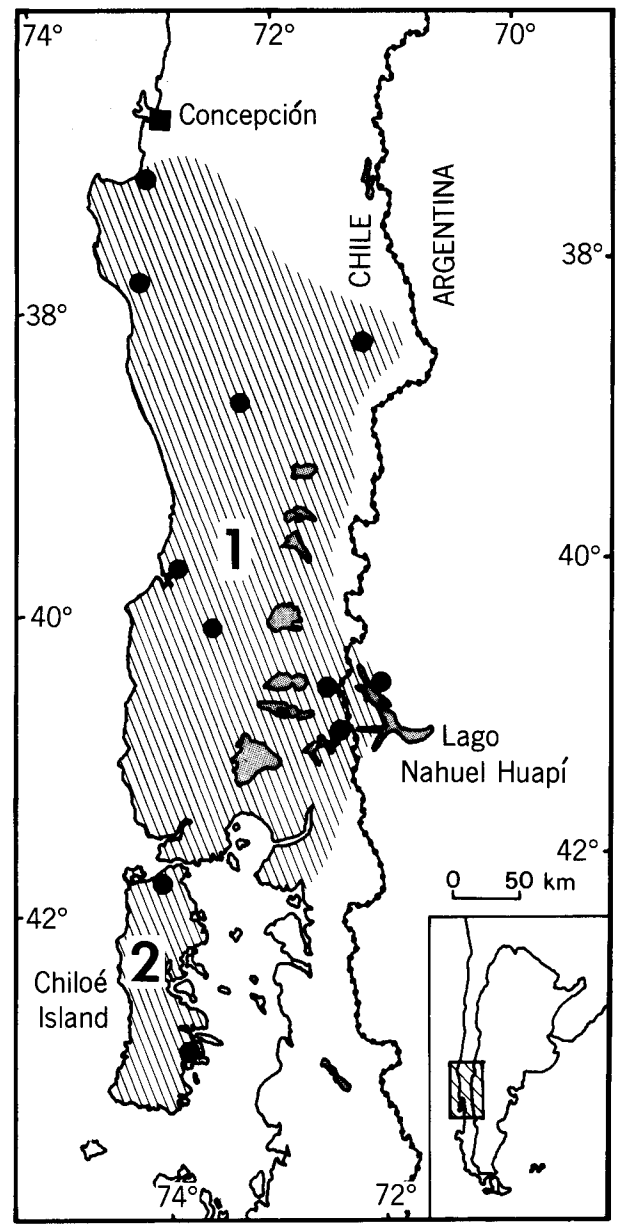

FIGURE 4. Map of central Chile and western Argentina showing geographic range of *Dromiciops australis* (after Osgood, 1943, map 3; Gollan, 1946, pl. 3). Subspecies are: 1, *D. a. australis*; and 2, *D. a. gliroides*.

FORM. The middle ear region of *Dromiciops* is greatly inflated and occupies a relatively large area on the base of the skull (see Segall, 1969*a*, 1969*b*, 1970). The alisphenoid contributes about one-third of the bulla wall and also supplies the anterior ascending part of the porus. The posterior two-thirds of the bulla are formed by a large inflated entotympanic. Laterally this bone forms the ventral and caudal part of the porus. Medially and medio-caudally it is in sutural contact with the basioccipital; further caudally it borders the exoccipital and postero-dorsally it is in contact with the small mastoid. It thus closes the posterior part of the bulla completely. Patterson (1965:6) noted that in addition to a tympanic wing of the *pars petrosa* (= entotympanic of Segall), the *pars mastoidea* is involved posteriorly.

At about the middle of the bulla, on its ventral side, there is an oval-shaped area that is bordered anteriorly by the above-mentioned alisphenoid-entotympanic suture. Posteriorly it is bordered by a line corresponding to a nearly complete septum on the inside of the bulla. The tympanic cavity is divided by two septa into three compartments. The anterior septum, which follows the suture between alisphenoid and entotympanic, is low and has a straight edge dorsally. It stretches from the inside of the lateral wall under the tympanic, with which it is in contact, along the floor of the bulla to the rostral end of the cochlea. The anterior compartment thus formed is in wide contact with the middle one, which contains the periotic on the medial side and the tympanic on the lateral side. The periotic ends anteriorly in a bulbous prominence, which is separated ventrally by a shallow groove into a medial part that reaches further forward and a lateral part. The second septum which separates the middle compartment from the posterior one, lies under the caudal part of the tympanic ring and connects it with the dorsal side of the ventral wall of the bulla. The septum in its lateral part goes antero-posteriorly from the alisphenoid suture, then turns medially to take a latero-medial course. This septum reaches the roof of the cavity, thus dividing completely the middle from the posterior compartment with the exception of a small oval-shaped opening in its upper part.

The tympanic forms a complete ring except for a small *incisura tympanica* dorsally. This space is taken up by the head of the malleus and the body of the incus. These elements reach into the epitympanic recess. The latter is separated from the external canal by a *membrana flaccida* and is mainly formed by the periotic. Only the lateral wall is supplied by the squamosal. A bony lamella arises from the dorsal end of the posterior tympanic *crus* and abuts against the periotic. The tympanic in *Dromiciops* is hidden from the lateral view, a feature restricted to that genus among all marsupials studied by Segall (1969*b*:500).

The morphology of the auditory ossicles is of great significance. The ossicular axis lies at an angle of minus 5 to 10 degrees to the horizontal plane. The important differences are much more marked in the malleus than in the two other ossicles. The head of the malleus, seen from above, has a longitudinal oval shape with the longest diameter practically in the horizontal plane. The caudally directed articular surfaces for the incus form an angle of about 90° with each other. Laterally on the lower border of the head of the malleus is a short curved crest. It runs caudoventrad from the underside of the anterior end of the head into the neck of the malleus and overhangs the slightly grooved proximal part of the anterior process. The axis of the head forms a medially open angle of approximately 150° with that of the neck. This condition is unique among the marsupials (Segall, 1969*b*:500). The anterior process, which is complex in other marsupials studied by Segall (1969*b*) is small and simplified in *Dromiciops*. Its tympanic plate is fused with the tympanic and breaks easily upon removal of the malleus. The manubrial lever is elongated and the lever ratio is greater than in any other marsupial genus studied by Segall (1969*a*:180–181, fig. 4). The solid body of the incus has a well developed short crus that reaches into the *fossa incudis* in the posterior wall of the tympanic cavity. The stapes is triangular. The stapedial plate is elliptical in shape (Segall, 1970:173).

FUNCTION. The voice of *Dromiciops* has been recorded as a chirring trill with a slight coughing sound at the end (Walker *et al.*, 1968:17). The name colocolo is but an onomatopoeia of its distinctive cry: *tzchí, tzchii, kod-kod* (Cabrera and Yepes, 1960:46). At night, or when left unmolested for a period of time, some individuals made soft buzzing noises (Greer, 1965:105).

Adaptations to cold environment are seen in the dense fur, the dark color of the body, and the reduced size of the external ears (Mann, 1955:161). The distinct pouch and the presence of only four teats also appear to be adaptations to the harsh environment (Mann, 1955:165). As an additional protection against the cold, moss nests are well protected below overhanging rocks, fallen tree trunks, or within the basal root systems of trees (Mann, 1955:162).

Mann (1955:163) found that these marsupials hibernate in winter when cold temperatures prevail and food is scarce. Hibernation is preceded by an accumulation of fat in the basal part of the tail. The heart rate drops from 230 per minute to less than 30 per minute (Mann, 1955:161). Animals captured by Greer (1965:105), kept alive in cages, and exposed to the night time cold temperatures in the same region in which they were trapped, would assume a flexed position. If early morning temperatures dropped to 4.5°C or lower, the animals' bodies became stiff, and quite cool to the touch. After being placed in a shirt pocket, they emerged from their torpor, finally crawling out of the pocket and becoming quite active (Greer, 1965:105).

Dromiciops, as have many other small marsupials, has protection from predators in the form of strong and repugnant secretions from cutaneous glands (Mann, 1955:166). Greer (1965:105) did not notice a disagreeable odor when the live animals were disturbed by handling as reported by Mann, nor did handling live-trapped animals provoke aggressive behavior.

ONTOGENY AND REPRODUTION. *Dromiciops australis* breeds in the spring. Philippi (1893*a*) reported finding five young in a nest near Valdivia. Krieg (1924) observed a female with four young but he did not specify the state of their development. Osgood (1943) found three young in the pouch of a female captured on November 23 at Peulla. In January and February of 1958, Mann (1958) found two small young in an arboreal nest in the trees on the south slope of Osorno Volcano. He also reported capturing a female carrying a young male on her back. Greer (1965) trapped a female with two pouch young measuring 8.0 mm and 8.2 mm on December 21, 1960. Kirsch (in Collins, 1973:60) reported having trapped a female during May whose well developed mammae were "Straining against the pouch opening." From the appearance of the mammae, he (Kirsch) surmised that the animal had large nest young at the time of capture.

Females have four mammae in a small but well developed abdominal pouch (Tate, 1933:36), pictures of which were given in Mann (1958:211, figs. 3, 4). "The lining of this pouch is deep Cinnamon-Rufous in color in sharp contrast to the surrounding parts as in *Caluromys*, to which, as suggested by Thomas [1894], *Dromiciops* may be most closely related. . .. The mammae are. . .symmetrically placed in two pairs" (Osgood, 1943:49). A medial "pseudo" vagina is well developed (Mann, 1958:209, figs. 1, 2).

Four stages have been described in the development of the young: 1) in the pouch attached to the teats; 2) in the nest; 3) on nocturnal trips on the mother's back; and, 4) in loose association with the other members of the family (Mann, 1958:210).

Both males and females become sexually mature during their second year. They reportedly live in pairs at least during the breeding season (Mann, 1958).

BEHAVIOR AND ECOLOGY. Individual *Dromiciops* are almost entirely nocturnal as are didelphids in general. They inhabit dense, cool, humid forests of the Chilean Andes, living especially in thickets of Chilean bamboo (*Chusquea* sp.) (Walker *et al.*, 1968:17; Tyndale-Biscoe, 1973:190).

Several specimens recorded by Osgood (1943:49) were caught in traps placed off the ground on fallen logs and, in one case, in the fork of a large tree some four feet above the ground. The type of *D. a. gliroides* was also taken "in the fork of a large tree" (Thomas, 1894:188).

In the wild, *D. australis* feeds largely on larvae and pupae of a variety of arthropods, especially insects, with preference for coleopterans (Mann, 1955:164; Walker *et al.*, 1968:17). The intestine of *Dromiciops* is relatively shorter than that of *Marmosa*, reflecting the predominance of animal matter in the diet of *Dromiciops*, in contrast to the more omnivorous diet in species of *Marmosa* (Mann, 1955:166).

Greer (1965:105) maintained three specimens at Michigan State University on a diet consisting of oatmeal, potatoes, powdered milk mixed with canned peach syrup (this mixture was either lapped from a dish by the animals or was fed through an eye dropper), plum, pear, watermelon, applesauce, blackberries, and hamburger. The hamburger was eaten ravenously. Known quantities of ham were fed to one individual weighing 26.5 grams. It ate an average of 4.1 grams of ham per day and consumed an average of 6 cc of water. By the end of five days, the animal had gained 3.0 grams.

Mann (1958:210) reported that nests of *Dromiciops* were found below fallen trunks, in hollow trees, and on branches. Nests in the bamboos *Chusquea coleu* and *C. cummingi* were usually about two meters above the ground. The nest (see Mann, 1958:212, fig. 7) which is 200 mm in diameter, is spherical with an opening of 30 to 40 mm. A small wall, presumably affording some sort of protection, was found at the opening of two of the five nests observed. The nests are usually constructed of the water repellent leaves of *Chusquea* and are lined internally with grasses or moss. Four of the five nests examined by Mann were entirely covered with gray moss, which not only protected it against rains but closely resembled the substrate in form and color, thus concealing the nest admirably.

Greer (1965:103) found no nests in trees as reported by Mann, but he did find a nest in a thicket of cane (*Chusquea* sp.) that had been bent to the ground by a fallen tree. One animal was trapped in front of a burrow that opened onto a dry slope next to a stump of an old roble (*Nothofagus obliqua*). The burrow averaged 100 mm in diameter and extended for 760 mm, sloping downward slightly before dividing into two separate smaller tunnels of undetermined length. No nests were found.

Greer (1965:104) trapped *Dromiciops* in association with other small mammals, such as *Oryzomys longicaudatus, Akodon longipilis, A. olivaceus, Notiomys macronyx, N. valdivianus, Phyllotis micropus, Irenomys tarsalis*, and *Octodon bridgesi*.

Osgood (1943:48) considered *D. a. australis* restricted to the "Valdivian Forest District" from the highest parts of the Cordillera de la Nahuelbuta east to, and beyond, the Argentine-Chilean border in the Andes. Moist, forested areas, at least in Malleco Province, appear to be the preferred habitat of this small opossum, although it is not confined to this habitat, being also found in *Araucaria-Nothofagus dombeyi* forests, *N. obliqua* woods, *N. obliqua-N. dombeyi* forests, and in localized wooded areas having evergreens, such as *Peumus boldus, Guevina avellana, Persea lingue, Myreeugenia* sp., and *Drimys winteri*, which are characteristic of southern forest. Cane (*Chusquea* sp.) thickets in these forested areas are likely places to trap *D. australis* (Greer, 1965:103).

GENETICS. The chromosomes of *Dromiciops australis* have been studied (Hayman and Martin, 1974:7; Sharman, 1973: 492; and Spotorno and Fernandez, 1971). The diploid number is 14; sex chromosomes are XY/XX. *Dromiciops* alone of all didelphids studied has 22 autosomal arms, and all but one pair of its autosomes are metacentric or submetacentric. Chromosomes 5 and 6 are sub-metacentric as in *Caluromys* (Sharman, 1973: 492, fig. 4).

Three of the four genera (*Dromiciops, Caluromys, Glironia*, and *Caluromysiops*) assigned by Reig (1955) to the Microbiotheriinae (*Dromiciops* being the exception) show remarkable cytological affinities with the 14 chromosome Didelphinae (Sharman, 1973:492). However, serological studies by Kirsch (discussed in Tyndale-Biscoe, 1973:24, fig. 1.10) indicated that within the Didelphidae, *Caluromys* and *Dromiciops* are distinct from members of the subfamily Didelphinae, and hence the serological evidence supports placement of these genera in the subfamily Microbiotheriinae as proposed by Reig (1955).

REMARKS. Natives in Chile have a series of superstitious beliefs about *Dromiciops*. It is described as "a small rat with red eyes, whose bite is venomous and produces convulsions." It is

believed that it is bad luck to see one of these animals or to have them living about the house. Some residents of the Lake region area in Chile have been known to burn their houses to the ground after seeing one of these inoffensive little animals running about in the house (Walker *et al.*, 1968:17). It is also said that in certain parts of Chile this animal enters houses in order to lick the saliva from the sick and that this act causes phthisis (Cabrera and Yepes, 1960:46). In the Mapuche Indian language it is called "Kongoy-kongoy," and other indigenous names are "kunuuma" and "huenukiki" (Cabrera and Yepes, 1960:46). In Chile the names llaca and monito del monte are in general use for this animal, although both names are sometimes also applied to *Marmosa elegans* (Osgood, 1943:50). Greer (1965:105) reported that natives in the Province of Malleco, Chile, who know the animal were unafraid of it. "Rata" (*cf.* "laucha," mouse; and "ratón," rat) was the name used locally for the animal.

Greer (1965:105) reported that specimens trapped with museum special traps often were not killed instantly by the snap traps. Each of three animals with damaged backs lived for two days before being killed. Another animal withstood at least 30 hours with its head and neck held in a trap. The same animal also survived an ocean trip back to Michigan.

Reported parasites include *Chiliopsylla* and *Ixodes* among the arthropods (Collins, 1973:60).

ETYMOLOGY. The generic name was given in recognition of the resemblance between this animal and *Dromicia nana*, the Tasmanian Dormouse- Phalanger (Thomas, 1894:187). The suffix *-ops*, is derived from the Greek word *ops*, gent. or *opseos*, aspect or appearance. *Dromiciops* refers to an animal with the appearance of *Dromicia*. Both species are similar in size and in superficial appearance. The specific name *australis* (*L. australis*, southern) alludes to the southern occurrence of this species. The subspecific name *gliroides* is derived from *glir-* (L., genit.) in reference to *gliris*, a dormouse; and *-oid* or *oides*, a contraction of the Greek *-o* + *eidos*, denoting likeness of form. The name refers to the dormouse-like appearance of the animal.

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