

# The genus *Oecomys* (Rodentia, Sigmodontinae) in Argentina

**Ulyses F. J. PARDIÑAS**

Area Geología y Paleontología, Centro Nacional Patagónico, Casilla de Correo 128, 9120  
Puerto Madryn, Chubut (Argentina)  
ulyses@cenpat.edu.ar

**Patricio RAMÍREZ-LLORENS**

Departamento de Ciencias Biológicas, Facultad de Ciencias Exactas y Naturales, Universidad  
Nacional de Buenos Aires, Ciudad Universitaria, 1428 Buenos Aires (Argentina)

---

Pardinas U. F. J. & Ramirez-Llorenz P. 2005. — The genus *Oecomys* (Rodentia, Sigmodontinae) in Argentina. *Mammalia* 69 (1): 103-107.

Among the highly diverse Neotropical sigmodontine rodents, the genera *Oryzomys* and *Oecomys* are outstanding because of their speciosity, wide distributions, and complex taxonomic histories. But, in contrast with the extensive efforts directed at clarifying *Oryzomys* taxonomy (e.g., Bonvicino *et al.* 1998; Musser *et al.* 1998; Weksler *et al.* 1999), *Oecomys* has not received comparable attention during the last four decades. Following the revisionary study of Hershkovitz (1960), who arranged multiple nominal forms in two species, *Oecomys bicolor* and *O. concolor*, some authors (e. g., Gardner & Patton 1976; Patton *et al.* 2000; Voss *et al.* 2001) proposing the resurrection of a number of species based on karyological and morphological data.

In Argentina, the only record of the genus is based on a single specimen trapped in Chaco Province (Massoia & Fornes 1965). Since that time, this genus has never been recorded again in Argentina, and extensive synthetic studies (Musser & Carleton 1993) ignored the Argentinean record.

In this note we documented the second locality for the genus in Argentina, and pose additional comments on the taxonomic status of the populations that inhabit the southern limit of the distribution of *Oecomys*. Taxonomic determinations were made on the basis of published literature and direct examination of *Oecomys* specimens housed at the Museum of Vertebrate Zoology (Berkeley, California). Dental nomenclature follows Reig (1977).

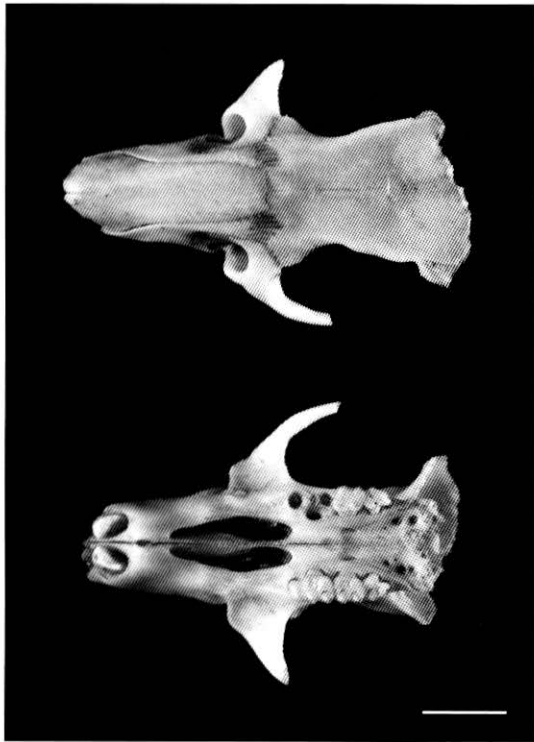


FIG. 1. — *Oecomys* sp. from Estancia Guaycolec (Chaco Province, Argentina): dorsal (top) and ventral (bottom) views of an anterior part of skull (CNP 701). Graphic scale = 5 mm.

Subfamily SIGMODONTINAE Wagner, 1843  
Tribe ORYZOMYINI Vorontzov, 1959  
Genus *Oecomys* Thomas, 1906

*Oecomys* sp.  
(Fig. 1)

REFERRED MATERIAL. — Eight incomplete mandibles and two anterior parts of skulls (deposited at Centro Nacional Patagónico Mammal Collection, Chubut, Argentina, numbers CNP 700-708).

LOCALITY. — Riacho Pilagá, Estancia Guaycolec (25°58'34"S, 58°10'48"W, Department of Formosa, Formosa Province, Argentina).

ENVIRONMENT. — The studied remains were recovered from pellets of *Pulsatrix perspicillata*

*perspicillata*, a large-woodland owl. A two-year study (Ramírez-Llorens 2003) of the diet of this owl strongly suggests that it preys strictly in the gallery forests along rivers. Phytogeographically the area belongs to the Oriental Chacoan District (Cabrera 1971). The climate is subtropical warm (mean annual temperature 27.4 °C) and humid (mean annual precipitation about 1,400 mm).

ADDITIONAL RECORDS. — Adult male (Colección Elio Massoia # 1107), collected in Makallé (27°12' S, 59°17'W, Department of General Donovan, Chaco Province; Massoia & Fornes 1965). This locality is about 200 km south of Estancia Guaycolec.

MEASUREMENTS. — See Table 1.

DESCRIPTION. — Mandible: robust and short. Anterior point of diastema below molar plane. Inferior masseteric crest sharp and prominent, confluent with upper masseteric crest at the level of the mental foramen. Condyle short and wide. Angular process short and wide. Coronoid process robust and short. Lunar and sigmoidal notches weakly developed. Capsular projection not evident, lying below coronoid process.

Skull (anterior part; Fig. 1): dorsal profile flat. Interorbital constriction well marked, with maximum constriction anterior to the midpoint of the orbit. Beaded supraorbital margins posteriorly divergent, without post-orbital processes. Short rostrum. Nasal bones abruptly expanded in the anterior third. Naso-frontal suture straight. Upper border of zygomatic plate not evident. Zygomatic plate high and narrow. Incisive foramina long and wide, posteriorly rounded, reaching the anterior root of M1. Palate narrow and long. Two posterolateral palatal pits on each side of the anterior part of the mesopterygoid fossa. Anterior part of mesopterygoid fossa U-shaped, well posterior to the posterior face of M3.

Molars: Upper molars with labial cusps slightly crested, labial cusps lying approximately opposite their lingual counterparts. M1 rectangular in outline; procingulum without anteromedian flexus.

TABLE 1. — Cranial and dental measurements for specimens of *Oecomys* sp. from Estancia Guaycolec (Chaco Province, Argentina). Measurements were taken according to Myers *et al.* (1990); the relative age of each specimen was estimated by the wear on its molars. CNP = Centro Nacional Patagónico Mammal Collection (Puerto Madryn, Argentina).

Age	CNP 700 subadult	CNP 701 adult	CNP 702 adult	CNP 703 subadult	CNP 704 adult	CNP 705 subadult	CNP 706 adult	CNP 707 adult	CNP 708 adult	mean	sd
Foramine incisive length	6.69	7.07	—	—	—	—	—	—	—	6.88	—
Foramine incisive width	3.04	3.29	—	—	—	—	—	—	—	3.17	—
Palatal length	15.00	15.93	—	—	—	—	—	—	—	15.47	—
Palate bridge	6.23	6.93	—	—	—	—	—	—	—	6.58	—
Rostral length	11.71	12.85	—	—	—	—	—	—	—	12.28	—
Rostral width	6.44	6.97	—	—	—	—	—	—	—	6.71	—
Nasal length (along midline suture)	11.12	11.89	—	—	—	—	—	—	—	11.51	—
Upper diastema length	8.61	9.12	—	—	—	—	—	—	—	8.87	—
Interorbital constriction breadth	5.14	6.12	—	—	—	—	—	—	—	5.63	—
Upper molars row length (alveolar)	5.29	5.41	—	—	—	—	—	—	—	5.35	—
Length of M1	2.35	2.55	—	—	—	—	—	2.42	—	2.45	0.14
Width of M1	1.53	1.51	—	—	—	—	—	1.55	—	1.52	0.01
Length of M2	1.54	1.59	—	—	—	—	—	—	—	1.57	—
Width of M2	1.47	1.49	—	—	—	—	—	—	—	1.48	—
Length of M3	1.18	1.12	—	—	—	—	—	—	—	1.15	—
Width of M3	1.18	1.25	—	—	—	—	—	—	—	1.22	—
Length of mandible without incisor	17.45	—	18.83	—	—	—	18.25	—	17.32	18.18	0.69
Lower diastema length	4.03	—	3.68	3.52	3.96	—	—	—	4.07	3.80	0.24
Lowers molars row length (alveolar)	5.50	—	5.69	5.90	5.73	—	—	5.58	5.54	5.71	0.16
Length of m1	2.39	—	2.46	2.40	2.40	2.27	—	2.41	2.41	2.38	0.07
Width of m1	1.32	—	1.46	1.32	1.36	1.32	—	1.36	1.35	1.36	0.06
Length of m2	1.79	—	—	1.64	—	—	—	1.52	1.50	1.72	0.11
Width of m2	1.44	—	—	1.41	—	—	—	1.43	1.30	1.43	0.02
Length of m3	1.66	—	1.66	1.64	1.62	1.65	1.65	1.52	1.56	1.65	0.02
Width of m3	1.18	—	1.20	1.21	1.29	1.26	1.15	1.24	1.16	1.22	0.05

Mesolophs persistent in M1 and M2. M3 reduced with respect to M2. Accessory labial root in M1 very reduced. Lower molars slightly crested, transversely compressed. Procingulum of m1 without anteromedian flexid, with antero-labial cingulum well developed and partially coalesced with protoconid. Mesolophids of m1 and m2 reduced and partially coalesced with entoconids. Large m3, subequal to m2, with penetrant and wide hypoflexid and obsolete mesoflexid. Persistent protoflexids in m2 and m3.

**TAXONOMIC COMMENTS.** — *Oecomys* sp. from Argentina is related morphologically to the large forms of the genus such as *O. mamorae* (Thomas, 1906) or *O. superans* Thomas, 1911 (see Patton *et al.* 2000). *Oecomys* sp. differs from these species in its larger incisive foramina, wider interorbital constriction, and shape and size of the mesopterygoid fossa. In addition, the absence of post-orbital processes and the larger incisive foramina distinguished it from *O. rex* Thomas, 1910 (see Voss *et al.* 2001). The biological significance of these differences can not be assessed until more Argentinean material becomes available and a comprehensive revision of the genus is carried out (fortunately, the latter is in progress; M. Carleton, pers. comm.). The reference to *O. concolor* (Wagner, 1845) made by Massoia & Fornes (1965) on the basis of the Makallé specimen is, in the light of the current knowledge of the genus, incorrect. *O. concolor* has an acute naso-frontal suture and short incisive foramen clearly distinct from that of the Argentinean specimens. Therefore, *O. concolor* must be removed from the Argentinean mammal fauna (Galliari *et al.* 1996).

*Oecomys concolor* was cited by Myers (1982) for Eastern Paraguay. The geographic origin of this specimen, forest along the Paraguay River and its tributaries, is similar to that of the Argentinean specimens and suggests that both may be referred to the same undetermined species.

Finally, the scarcity of Argentinean records of sigmodontine forest specialists may be related to methodological bias more than to the rarity of

these taxa. The Argentinean records of genera such as *Blarinomys* or *Abrawayaomys* were partially based on material recovered from pellets of the Barn Owl, *Tyto alba* (Massoia 1993). As is well known, this owl preys mainly in open areas. Thus, the representation of forest species in the assemblages generated by this raptor is necessary low. At Estancia Guaycolec, for example, Barn Owl diet included only rodents inhabiting unforested areas (e.g. *Holochilus chacarius*, *Oligoryzomys* spp., *Scapteromys aquaticus*; see Massoia *et al.* 1997). In sharp contrast, *Pulsatrix* preys exclusively on forest mammals (*Oecomys* sp., *Oryzomys ratticeps*, and *Philander frenata* Ramírez-Llorens, 2003), showing no dietary overlap with *T. alba*. Additional field work is much needed to gain a more complete picture of the sigmodontine communities at the southern boundary of the subtropical forest of the Neotropics.

### Acknowledgements

The authors are indebted to P. Myers, M. Weksler, J. Patton, and G. D'Elia for useful comments and help. Field work in Guaycolec was possible by the financial support of Fundación ECO from Formosa, Argentina and the logistic support provided by Pilagá S.A. Ganadera, E. Fernandez-Duque and the local community. The authors are members of Consejo Nacional de Investigaciones Científicas y Técnicas.

### REFERENCES

- BONVICINO C., OTAZU I. & WEKSLER M. 1998. — *Oryzomys lamia* Thomas, 1901 (Rodentia, Cricetidae): karyotype, geographic distribution and conservation status. *Mammalia* 62: 253-258.
- CABRERA A. 1971. — Fitogeografía de la República Argentina. *Boletín de la Sociedad Argentina de Botánica* 14: 1-42.
- GALLIARI C., PARDINAS U. & GOIN F. 1996. — Lista comentada de los mamíferos argentinos. *Mastozoología Neotropical* 3: 39-61.
- GARDNER A. & PATTON J. 1976. — Karyotypic variation in oryzomyine rodents (Cricetinae) with comments

- on chromosomal evolution in the Neotropical cricetine complex. *Occasional Papers of the Museum of Zoology, Louisiana State University* 49: 1-48.
- HERSHKOVITZ P. 1960. — Mammals of northern Colombia, preliminary report no. 8: Arboreal rice rats, a systematic revision of the subgenus *Oecomys*, genus *Oryzomys*. *Proceedings of the United States National Museum* 110: 513-568.
- MASSOIA E. 1993. — Los roedores misioneros – 1 – Lista sistemática comentada y geonemia provincial conocida. *Boletín Científico, Asociación para la Protección de la Naturaleza* 25: 42-51.
- MASSOIA E. & FORNES A. 1965. — *Oryzomys* (*Oecomys*) Thomas, 1906, nuevo subgénero de cricétidos para la República Argentina (Rodentia). *Physis, Sección C* 25: 319-324.
- MASSOIA E., HEINONEN FORTABAT S. & DIEGUEZ A. 1997. — Análisis de componentes mastozoológicos y ornitológicos en regurgitados de *Tyto alba* de Estancia Guaycolec, Depto. Pilcomayo, Pcia. de Formosa, República Argentina. *Boletín Científico, Asociación para la Protección de la Naturaleza* 32: 12-17.
- MUSSER G. & CARLETON M. 1993. — Family Muridae, in WILSON D. & REEDER D. (eds), *Mammal Species of the World. A Taxonomic and Geographic Reference*. Second Edition, Smithsonian Institution Press, Washington: 501-756.
- MUSSER G., CARLETON M., BROTHERS E. & GARDNER A. 1998. — Systematic studies of Oryzomyine rodents (Muridae: Sigmodontinae): Diagnoses and distributions of species formerly assigned to *Oryzomys* "capito". *Bulletin of the American Museum of Natural History* 236: 1-376.
- MYERS P. 1982. — Origins and affinities of the mammal fauna of Paraguay. *Special Publication Series, Pymatuning Laboratory of Ecology*, University of Pittsburgh, Pennsylvania 6: 85-93.
- MYERS P., PATTON J. & SMITH M. 1990. — A review of the *boliviensis* group of *Akodon* (Muridae: Sigmodontinae), with emphasis on Peru and Bolivia. *Miscellaneous Publications, Museum of Zoology, University of Michigan* 177: 1-104.
- PATTON J., DA SILVA M. & MALCOLM J. 2000. — Mammals of the rio Juruá and the evolutionary and ecological diversification of Amazonia. *Bulletin of the American Museum of Natural History* 244: 1-306.
- RAMÍREZ-LLORENS P. 2003. — Ecología trófica de Strigiformes en Argentina: *Pulsatrix perspicillata* (Lechuzón Mocho Grande). Seminario de licenciatura, Facultad de Ciencias Exactas y Naturales. Universidad Nacional de Buenos Aires, Argentina, 94 p.
- REIG O. 1977. — A proposed unified nomenclature for the enamelled components of the molar teeth of the Cricetidae (Rodentia). *Journal of Zoology* 181: 227-241.
- VOSS R., DARRIN S., LUNDE P. & SIMMONS N. 2001. — The Mammals of Paracou, French Guiana: A Neotropical lowland rainforest fauna part 2. Nonvolant species. *Bulletin of the American Museum of Natural History* 263: 1-236.
- WEKSLER M., GEISE L. & CERQUEIRA R. 1999. — A new species of *Oryzomys* from the *capito* group (Rodentia, Sigmodontinae) from Southeast Brazil. *Zoological Journal of the Linnean Society* 125: 445-462.

Submitted on 27 December 2002;  
accepted on 12 October 2004.