

Mammalia, Rodentia, Cricetidae, *Neusticomys monticolus* (Anthony, 1921): Noteworthy records of the Montane Fish-Eating Rat in Colombia

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ABSTRACT: We document the presence of the Montane Fish-eating Rat, *Neusticomys monticolus*, in two páramo ecosystems of the Colombian Andes, in the departments of Valle del Cauca and Cauca at 3558 and 3300 m respectively. For small mammals, páramo ecosystems are underexplored zones in a biogeographic context.

Fish-eating Rats, genus *Neusticomys* (Rodentia, Cricetidae, Sigmodontinae, Ichthyomyiinae), are semiaquatic South American rodents that include six species: *N. monticolus* (Anthony, 1921), *N. venezuelae* (Anthony, 1929), *N. peruviansis* (Musser and Gardner, 1974), *N. oyapocki* (Dubost and Petter, 1978), *N. mussoi* (Ochoa and Soriano, 1991) and *N. ferreirai* (Percequillo, Carmignotto and Silva, 2005). The Montane Fish-eating Rat, *N. monticolus*, has dull grayish black pelage, narrower rostrum (with philtrum present) that is more rounded at the tip, a shorter head and body, and smaller incisors but proportionally larger molars than *N. oyapocki*, *N. peruviansis* and *N. venezuelae* (Voss 1988; Packer and Lee 2007). The species is similar in size to *N. mussoi* and *N. ferreirai*, yet it can be differentiated by its lighter colored feet, grayish black pelage rather than brown, pinnae with the internal side grayish black and a longer pollex; also by its less flattened skull in dorsal profile with nasals not compressed laterally, and a more inflated braincase (Ochoa and Soriano 1991; Packer and Lee 2007).

The Montane Fish-eating Rat is distributed throughout the western and central Andes of Colombia from 1,800 to 2,350 m, and the northern Andes of Ecuador from 1,850 to 3,754 m. It inhabits small, fast-moving streams in cloud forests and can be captured even near waterfalls (Voss 1998; Packer and Lee 2007). It has been recorded in páramo zones of Ecuador, but in Colombia the records are restricted to cloud forest zones, without confirmation for páramo zones. There are specimens from the Central Andes (departments of Huila and Risaralda) and Western Andes (departments of Valle del Cauca and Antioquia) of Colombia (Alberico *et al.* 2000; Rojas-Díaz *et al.* 2012), but there are none from other regions that are considered to be within its distribution area (Table 1) (*e.g.* Alberico *et al.* 2000; Castaño *et al.* 2003; Ramírez-Chávez and Noguera-Urbano 2010; Ramírez-Chávez and Pérez 2010).

We document the finding of *N. monticolus* in two páramos of Colombia. An adult male was collected on 24 February 1995 in the páramo “La Herrera” (3°19'26” N,

76°4'17” W, 3558 m), municipality of Florida, western slope of the Cordillera Central, department of Valle del Cauca (UV-11249). Another adult male was collected on 13 June 2010 in Termales de San Juan, Puracé National Natural Park (PNN), (2°20'37”N, 76°18'29”W, 3300 m), municipality of Puracé, department of Cauca (UV-13704) (Figure 1). Both specimens were collected with a middle



FIGURE 1. An adult male of *Neusticomys monticolus* (UV-13704) from Termales de San Juan, municipality of Puracé, Cauca, Colombia. Photos by A.P. Yusti-Muñoz.

sized Sherman Trap ® (340 mm X 105 mm X 105 mm), baited with a mix of butter, oat and vanilla essence, during student field trips, and were deposited in the collection of mammals of the Universidad del Valle (UV), Cali, Valle del Cauca, Colombia.

Selected external and cranial measurements (mm) and weight (g) of the specimens (UV11249 – UV13704), followed by maximum and minimum measurements for the species (see Voss 1988), are: total length, 216 – 195 (195 – 214); length of tail, 113 – 110 (92 – 102); length of hind foot, 26 – 24 (24 – 28); ear, 11 – 11 (9 – 10); weight, 24 – 28 (24 – 26); condylo-incisive length, 24.24 – 23.87 (23.70 – 25.20); length of diastema, 6.04 – 5.89 (5.70 – 6.20); length of the maxillary molars, 4.08 – 4.30 (4.20 – 4.40); length of the incisive foramina, 4.61 – 4.87 (4.10 – 5.20); breadth of the incisor tips, 1.44 – 1.81 (1.3 – 1.6); breadth of the incisive foramina, 1.82 – 2.02 (1.80 – 2.20); breadth of the palatal bridge, 2.90 – 3.29 (2.50 – 3.30); length of nasals, 10.02 – 8.41 (8.90 – 10.10); breadth of nasals, 3.39 – 3.23 (2.90 – 3.20); least interorbital breadth, 4.58 – 4.67 (4.40 – 5.20); zygomatic breadth, 12.39 – 13.05 (12.10 – 13.10); breadth of braincase, 11.67 – 12.92 (11.90 – 12.40); breadth of the zygomatic plate, 1.37 – 1.33 (1.10 – 1.50); breadth of M1, 1.36 – 1.37 (1.30 – 1.40); height of incisor, 4.10 – 4.00 (4.10 – 4.60); depth of incisor, 1.34 – 1.30 (1.30 – 1.50); and, breadth of the occipital condyles, 6.75 – 7.51 (6.60 – 7.50) (Figure 2).

Our findings confirm the presence of the Montane Fish-Eating Rat in Colombian páramo communities, and extend its elevation range up to 3558 m in this country. We also confirm the occurrence of the species in two departments of Colombia. The record in the páramo communities at La Herrera is the first for the central Andes in the department of Valle del Cauca, and the one from PNN Puracé is the first for the department of Cauca (Figure 3). Because the Montane Fish-eating Rat is a rare species linked with fast streams, the determination of its occurrence throughout

the country has been difficult, and previous records of the species were derived from anecdotal captures. Thus knowledge about habitat requirements and distribution of the species remains poor.

Páramo ecosystems in Colombia are underexplored areas for small mammals and have received little attention during several decades. These zones are important in a biogeographic context, since they have isolated populations of some vertebrate groups. Our records show the need to explore páramo communities to evaluate more rigorously the taxonomic status and phylogenetic relationships of South American small mammals.

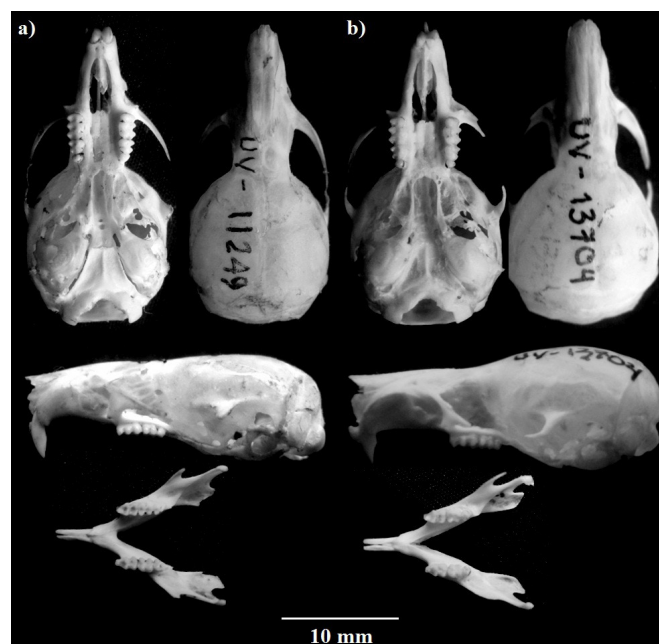


FIGURE 2. Dorsal, lateral and ventral view of the skull and mandible of *Neusticomys monticolus* specimens from a) municipality of Florida, Valle del Cauca (UV-11249) and b) municipality of Puracé, Cauca (UV-13704).

TABLE 1. Records of the Montane Fish-eating Rat, *Neusticomys monticolus* in Colombia and Ecuador.

DEPARTMENT / PROVINCE	LOCALITY	COORDENATES	ALTITUDE (M)	SPECIMEN DATA	SOURCE
Colombia					
Valle del Cauca	La Herrera, Florida	3°19'26" N - 76°4'17" W	3558	UV-11249	Specimen
Cauca	Termales de San Juan, Puracé	2°20'37" N - 76°18'29" W	3300	UV-13704	Specimen
Valle del Cauca	Pichindé	3°26' N - 76°37' W	1900	UV-6039 - 6041, 6641	Specimen
Risaralda	PRN Ucumari	4°45' N - 75°33' W	2500	ICN-12118	Specimen
Huila	San Antonio	1°58' N - 76°35' W	2350	FMNH-71224, 71225	Voss 1988
Antioquia	Codillera Occidental	6°25' N - 76°00' W	2700	FMNH-71218 - 71223	Voss 1988
Ecuador					
Pichincha	Guarumal, SE Volcán Pichincha	0°17' S - 78°43' W	2300	UMMZ-126298 - 126299	Voss 1988
Pichincha	Las Machinas	0°22' S - 78°44' W	2100		Voss 1988
Pichincha	Nono Farm, San Francisco	0°4' S - 78°35' W	2600		Voss 1988
Napo	Papallacta	0°22' S - 78°8' W	3000	AMNH - 244608 - 244609	Voss 1988
Chimborazo	Pauchi	2°17' S - 78°59' W	2000		Voss 1988
Pichincha	Río Pita	0°19' S - 78°27' W	2900		Voss 1988
Tunguragua	San Antonio, Río Ulva	2°14' S - 78°25' W	3000		Voss 1988
Pichincha	San Ignacio	0°12' S - 78°33' W	3400	AMNH - 64625 - 64626	Voss 1988
Bolivar	Sinche	1°32' S - 78°59' W	3250		Voss 1988

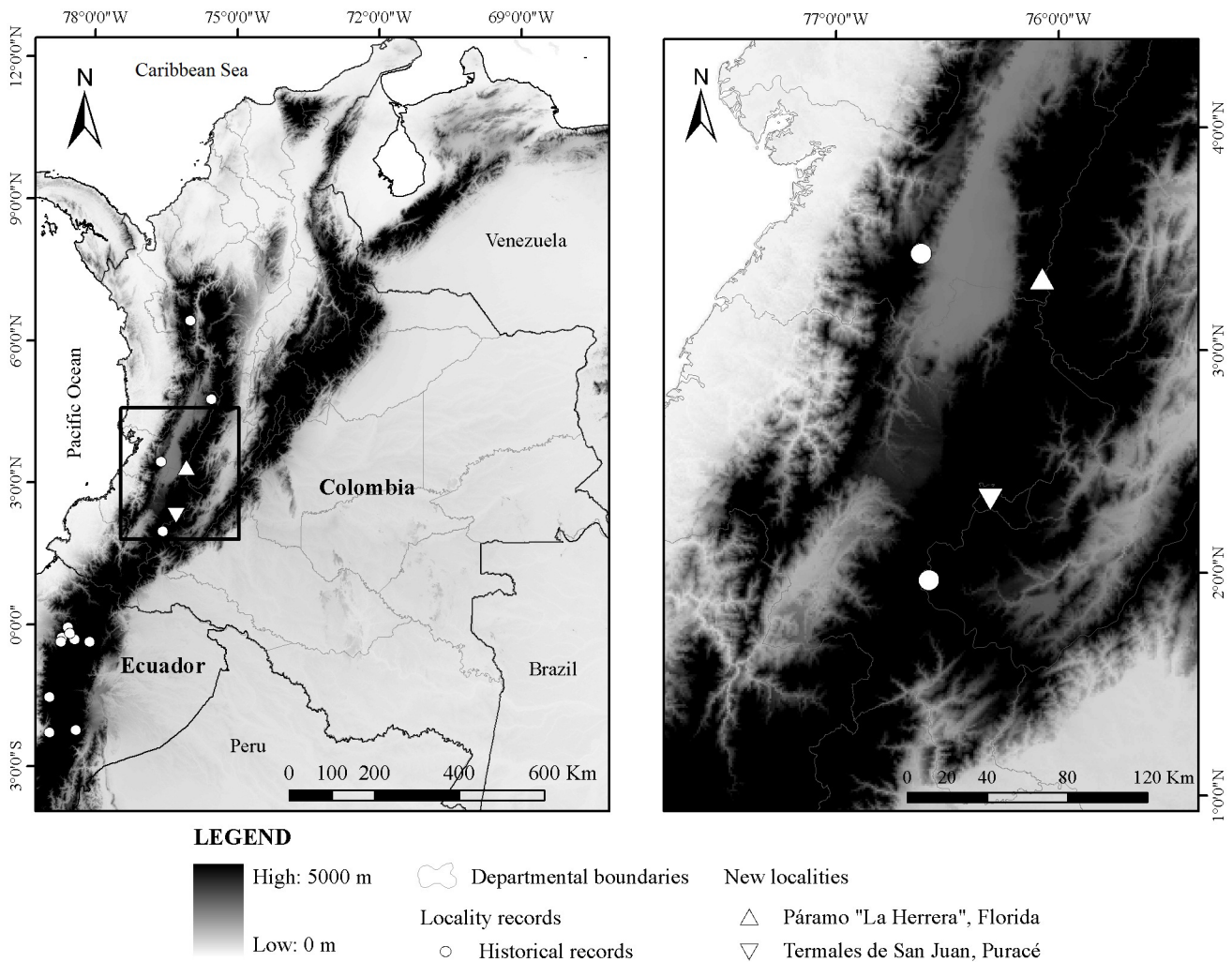


FIGURE 3. Records of *Neusticomys monticolus* in Andes of Colombia and Ecuador. New and historical records are showing with white triangles and dots, respectively.

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