

Establishing the availability of the recently erected binomen *Phyllotis pehuенche* (Rodentia, Cricetidae, Sigmodontinae)

Estableciendo la disponibilidad del binomio recientemente erigido *Phyllotis pehuенche* (Rodentia, Cricetidae, Sigmodontinae)

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In 2021, Jayat *et al.* propose a new species of sigmodontine rodent, named *Phyllotis pehuенche*, for the populations of the *P. xanthopygus* species complex from southwestern Mendoza and western Neuquén provinces, Argentina. The formal description of the species, published in a modifiable electronic supplementary material, do not fulfill the requirements established by the Amendment on e-publication (ICZN 2012) of The Fourth Edition of the International Code of Zoological Nomenclature (ICZN 1999), rendering the name *Phyllotis pehuенche* unavailable. The objective of this note was to comply with the provisions of the code and make the name available. Here we offer a summarized version of the original description of this species. In this note, we provide a taxonomic account for *P. pehuенche*, including its synonymy, type locality, holotype and paratypes, providing the etymology of the specific epithet, and offering a diagnosis for the species and comments regarding its geographic distribution. With the provided information, we comply with the provisions of The International Code of Zoological Nomenclature (ICZN 1999, 2012) making the name available.

Key words: Argentina; nomenclature; Phyllotini; Sigmodontinae; taxonomy.

En 2021, Jayat *et al.* propusimos una nueva especie de roedor sigmodontino, nombrada *Phyllotis pehuенche*, para las poblaciones del complejo de especies de *Phyllotis xanthopygus* del sudoeste de la provincia de Mendoza y el oeste de la provincia de Neuquén, Argentina. La descripción formal de la especie, publicada en un material suplementario electrónico modificable, no cumple con los requerimientos establecidos en la enmienda sobre publicaciones electrónicas (ICZN 2012) de la Cuarta Edición del Código Internacional de Nomenclatura Zoológica (ICZN 1999), haciendo que el nombre no esté disponible. El objetivo de esta nota es cumplir con los requerimientos del código y hacer el nombre disponible. Aquí ofrecemos una versión resumida de la descripción original de esta especie. En esta nota, ofrecemos un tratamiento taxonómico para *P. pehuенche*, incluyendo su sinonimia, localidad tipo, holotipo y paratipos, proveyendo la etimología del epíteto específico, y ofreciendo una diagnosis para la especie y comentarios acerca de su distribución geográfica. Con toda la información provista, cumplimos con los lineamientos del Código Internacional de Nomenclatura Zoológica (ICZN 1999, 2012) haciendo el nombre disponible.

Palabras clave: Argentina; nomenclatura; Phyllotini; Sigmodontinae; taxonomía.

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In 2021, Jayat *et al.* published a morphologic and molecular review of the *Phyllotis xanthopygus* species complex of the central and southern Andes, proposing a new species, *Phyllotis pehuенche*, for the population from southwestern Mendoza and western Neuquén provinces, Argentina. The study, published in an electronic only journal, do not fulfill

the article 8.1.3.2, concerning the accessibility of electronic copies with fixed content and layout. The inclusion of the definition or description of the new taxon and the fixation of a holotype were addressed in a modifiable (word type file) supplementary material instead of within the main text of the contribution, being therefore the

name unavailable. However, all the conclusions reached by [Jayat et al. \(2021\)](#) about species limits and taxonomic status, remain valid. In this note we comply with the provisions of The International Code of Zoological Nomenclature ([ICZN 1999, 2012](#)) in order to solve these deficiencies and make the name *Phyllotis pehuенche* available. The information provided below was mainly taken from the Supplementary Material S6 of [Jayat et al. \(2021\)](#). This published work have been registered in ZooBank (LSID urn:lsid:zoobank.org:pub:151D639A-B722-4150-BDB5-25F50FF9F579) and the online version of this work will be archived and available at Zenodo (<https://zenodo.org/>).

We offer a summarized version of the original description of this species (see supplemental material 6 of [Jayat et al. 2021](#)). More important, we provide information about the holotype and paratypes specimens, the type locality, the etymology of the specific epithet, the diagnosis for the species, and comments regarding its geographic distribution.

Acronyms for the mammal collections of Argentina mentioned in text are as follow: Instituto Argentino de Investigaciones de Zonas Áridas (CMI), Mendoza; Museo Argentino de Ciencias Naturales "Bernardino Rivadavia" (MACN-Ma), Ciudad Autónoma de Buenos Aires; Centro Nacional Patagónico (CNP), Puerto Madryn.

Taxonomy

Subfamily Sigmodontinae Wagner, 1843

Tribe Phyllotini Vorontsov, 1959

Genus *Phyllotis* Waterhouse, 1837

Phyllotis pehuенche, new species

LSID urn:lsid:zoobank.org:act:F518FEC6-FE85-44BF-90A6-F34BDBBED764R, (Figures 1 and 2).

Phyllotis darwini vaccarum: Pearson, 1958:419; part.

Phyllotis darwini xanthopygus: Pearson, 1958:420; part.

Phyllotis darwini rupestris: Hershkovitz, 1962:302; part.

Phyllotis xanthopygus vaccarum: Steppan, 1998:574; part.

Phyllotis xanthopygus (clade centro-2): Riverón, 2011:39.

Phyllotis xanthopygus (mesw, nqnw, and nqso geographic aggregations): Teta et al. 2018:70.

Phyllotis sp. 2 clade: Ojeda et al. 2021:10.

Phyllotis pehuенche Jayat, Teta, Ojeda, Steppan, Osland, Ortiz, Novillo, Lanzone, and Ojeda, 2021:689 (name unavailable).

Holotype.— An adult (age class 3) male (CMI 6791), including skin, skeleton, and tissues, collected on 23 February 2004 by R. A. Ojeda (original field number RAO 126). An associated 801 base-pair sequence of the *cytochrome-b* (*cytb*) gene has been deposited in GenBank with accession number MT 776482 (see [Ojeda et al. 2021](#)). See Table 1 for measurements of the holotype.

Type locality.— Argentina, Provincia de Mendoza, Departamento Malargüe, 10 km al S de Las Leñas, margen

del Río Salado, 1,900 m. Geographic coordinates of the collecting site (wrongly reported as 35° 10' 55"S, 70° 42' 00"W in the original publication; see Supplementary Material S6 in [Jayat et al. 2021](#)) are 35° 11' 41"S, 70° 2' 53"W (Figure 3).

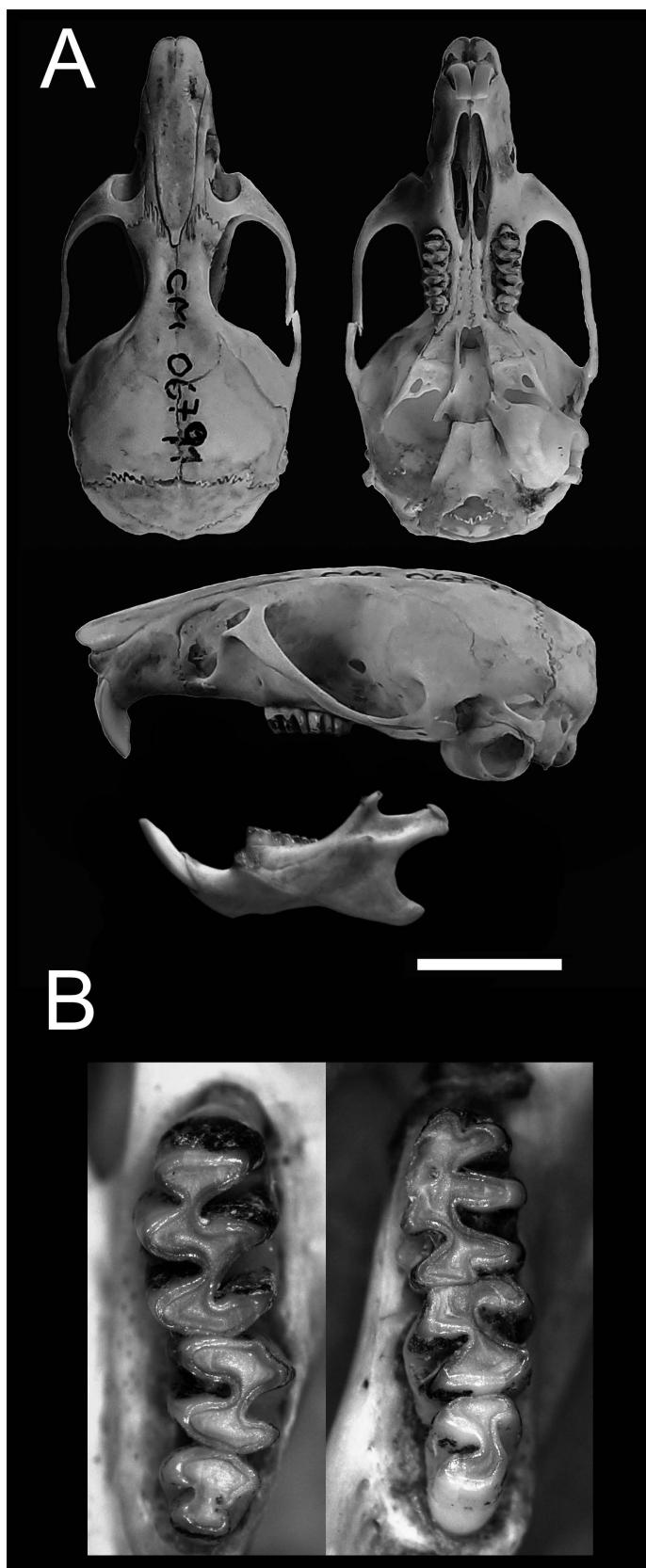


Figure 1. *Phyllotis pehuенche* new sp. Holotype (CMI 6791). A) dorsal (upper left), ventral (upper right) and lateral (middle) views of skull and labial view (bottom) of mandible. Scale bar = 10 mm. B) left upper (left) and left lower (right) molar rows (not in scale).

Diagnosis.— *Phyllotis pehuенche* new sp. can be distinguished from all other species of *Phyllotis* by the following combination of characters: medium size for the genus but somewhat large-sized in the context of the *P. xanthopygus* species complex (see Table 1 in Jayat et al. 2021). Fur with dorsum light yellowish ochre, smoothly spattered with black; flanks with a slightly developed yellowish-orange fringe; venter predominantly whitish gray, washed with buff in some specimens. Ears covered by sparse light orangish hairs (Figure 2B). Hind foot comparatively large. Tail generally shorter than, or approximately of the same length, of the length of the head and body, and not strongly bicolored (light brown above and grayish-white below). Manus and pes completely covered with short white hairs (Figure 2A). Skull not so heavily constructed for the genus, with a narrow rostrum, and rounded (not sharp-edged) inter-orbital region. Nasals anteriorly not much widened. Fronto-parietal suture mostly “U” shaped. Zygomatic arches comparatively not well expanded. Zygomatic notches narrower and less excavated than other species of the genus. Postero-palatal pits large and located ahead of the anterior border of the mesopterigoyd fossa (Figure 1A). Upper incisors generally orthodont, frontally covered by orange enamel. Upper and lower molar series comparatively large but thin.

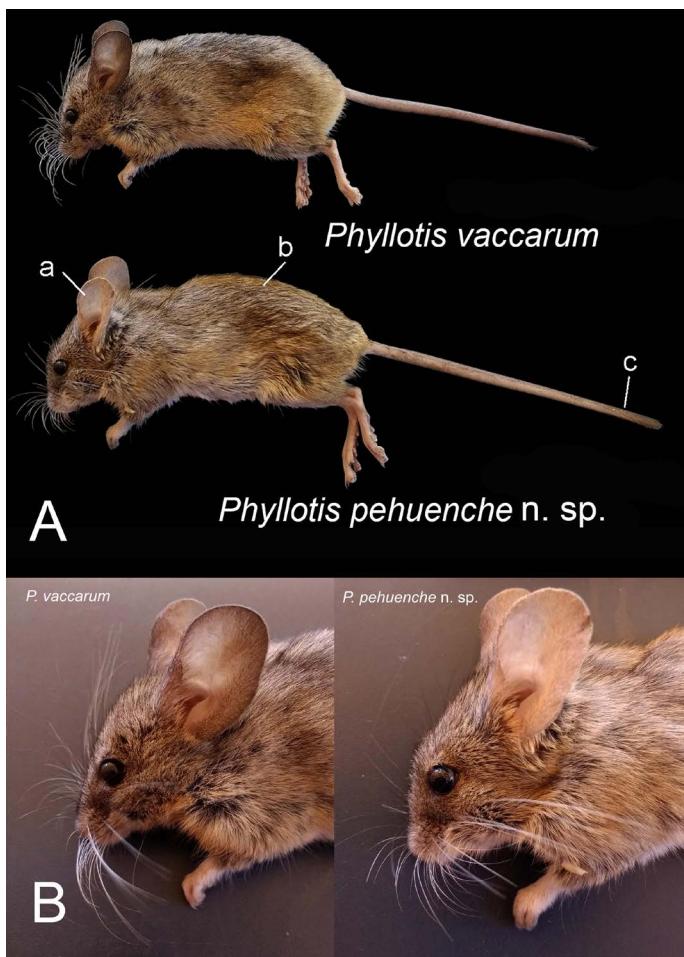


Figure 2. Comparison of the external characteristics in *P. vaccarum* and *P. pehuенche* new sp. showing: A) the clearer ears (a), the light-colored skin pattern (b) and the tail without the black tip (c) in the new species; and B) the detail of the ear coloration in *P. vaccarum* (ears covered with blackish hairs) and *P. pehuенche* new sp. (ears covered with orangish hairs).

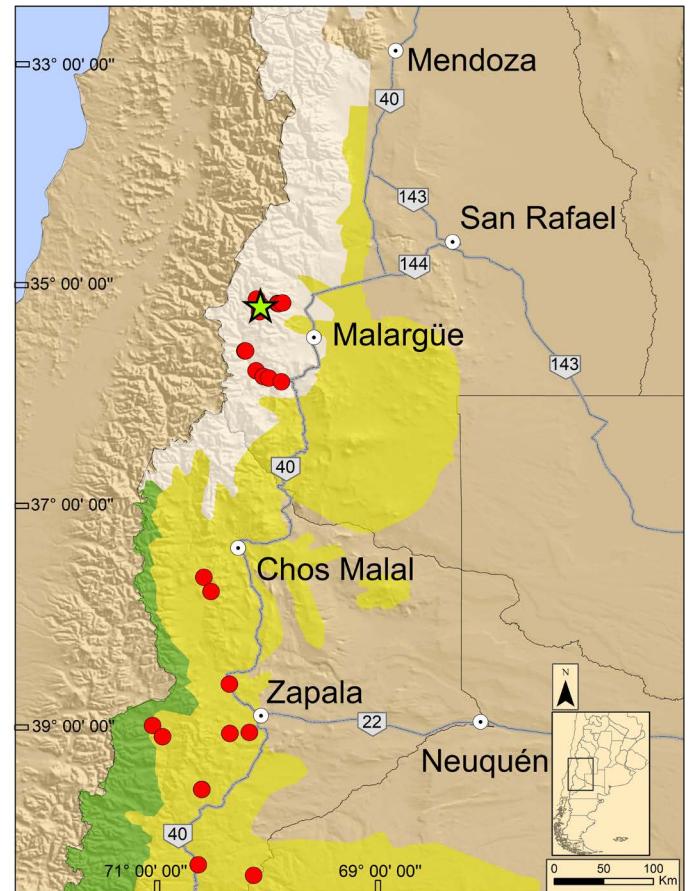


Figure 3. Map showing the type locality (green star) and additional records (red dots) of *P. pehuенche* new sp. in central western Argentina (Mendoza and Neuquén provinces). Shaded areas indicate ecoregions (white = Altos Andes; yellow = Estepa Patagónica; green = Bosques Patagónicos) sensu Burkart et al. (1999).

Simplified enamel molar pattern on the upper molar series, with a very shallow paraflexus on M2 and no trace of mesoloph complex on M1 and M2 (Figure 1B). Karyotype characterized by $2n = 38$, FN = 71-72.

Paratypes.— Three specimens collected at the type locality. CMI 6795 is a juvenile female (age class 1), including skin, skeleton, and tissues (GenBank MT 776481) collected on 23 February 2004 by R. A. Ojeda (original field number RAO 130). CMI 6792 is a juvenile male (age class 2), including skin, skeleton, and tissues (GenBank MT 776484) collected on 23 February 2004 by R. A. Ojeda (original field number RAO 125). CMI 6790 is a juvenile unknown sex (age class 2), including skin, skeleton, and tissues (GenBank MT 776483) collected on 23 February 2004 by R. A. Ojeda (original field number RAO 138).

Other referred specimens.— Fifty-four specimens from Mendoza (2.2 km E Los Molles, CMI 5275; 3.2 km E Los Molles, CMI 5249; a 7 km al Norte de Las Loicas, por R 226, 1,626 m, CMI not cataloged (field catalog number A. Ojeda 450), CMI not cataloged (field catalog number A. Ojeda 460); a 20 km al O de Bardas Blancas, R 145, 1,502 m, CMI 7651 - 7659; a 36 km al O de Bardas Blancas, R 145, 1,536 m, CMI 7625, CMI 7627 - 7629, CMI 7631 - 7632, CMI 7634 - 7639, CMI 7643, CMI 7645 - 7646, CMI 7661 - 7664, CMI 7672, CMI 7676, CMI 7679, CMI 7689; Arroyo El Seguro, 1,800 m, CMI 7421), and Neuquén (18 km S, 3 km E ,by road, Lonco Luan, a lo largo

Table 1. External and craniodental measurements (in mm) for the holotype specimen and all age classes of *P. pehuенche* new sp. *n* = sample size; \bar{X} = mean; *SD* = standard deviation; *r* = range. Measurement abbreviations are listed in Materials and Methods of Jayat *et al.* (2021).

<i>P. pehuенche</i> new sp. Holotype	<i>P. pehuенche</i> new sp. age class 1			<i>P. pehuенche</i> new sp. age class 2			<i>P. pehuенche</i> new sp. age class 3			<i>P. pehuенche</i> new sp. age class 4			<i>P. pehuенche</i> new sp. age class 5			
	<i>n</i>	$X \pm SD$	<i>r</i>													
TBL	280	15	205 ± 19.89	170–240	17	231 ± 18.12	202–266	7	246 ± 13.37	230–280	2	249 ± 15.56	238–260	4	264 ± 12.07	251–278
T	135	15	100 ± 11.69	65–112	18	112 ± 9.55	95–132	7	117 ± 8.04	112–135	2	117 ± 10.61	109–124	4	124 ± 11.74	113–140
HF	33	15	29 ± 1.72	25–31	20	31 ± 1.67	26–33	7	29 ± 3.31	25–33	2	31 ± 2.12	29–32	5	31 ± 1.79	28–32
E	26	15	22 ± 1.46	20–25	20	24 ± 1.97	20–27	7	25.34 ± 1.04	24–27	2	24.5 ± 0.71	24–25	5	26 ± 1.10	25–27
W	70	13	35 ± 11.68	19–58	18	48 ± 11.61	34–80	7	59 ± 14.24	36–74	2	56.5 ± 6.36	52–61	5	60 ± 17.37	31–75
TLS	33.56	14	28.82 ± 1.21	27.15–31.03	20	31.02 ± 1.13	29.11–32.87	7	31.64 ± 1.21	30.29–33.56	3	32.05 ± 1.01	30.95–32.94	4	33.07 ± 1.26	31.77–34.25
CIL	30.97	14	26.10 ± 1.29	24.12–28.44	20	28.41 ± 1.17	26.58–30.41	7	29.16 ± 1.11	27.77–30.97	3	29.85 ± 0.88	28.85–30.48	5	31.06 ± 1.15	29.53–32.19
BL	28.31	14	23.87 ± 1.26	22.11–26.21	20	26.19 ± 1.16	24.38–28.46	7	26.84 ± 0.95	25.69–28.31	3	27.66 ± 0.86	26.73–28.43	5	28.75 ± 1.11	27.24–29.74
PL	17.35	15	14.75 ± 0.71	13.84–16.15	21	16.03 ± 0.70	14.67–17.27	8	16.40 ± 0.53	15.74–17.35	3	16.83 ± 0.70	16.03–17.30	5	17.50 ± 0.67	16.48–18.14
DL	8.99	15	6.94 ± 0.44	6.33–7.98	22	7.83 ± 0.49	6.95–8.71	8	8.19 ± 0.51	7.65–8.99	3	8.40 ± 0.25	8.11–8.56	5	8.79 ± 0.15	8.60–8.97
PB	5.86	15	5.50 ± 0.32	5.05–6.06	21	5.76 ± 0.32	5.01–6.33	8	5.74 ± 0.29	5.14–6.17	3	5.64 ± 0.15	5.49–5.79	5	5.84 ± 0.46	5.08–6.21
MTRL	5.59	15	5.88 ± 0.13	5.66–6.07	22	5.87 ± 0.16	5.65–6.20	8	5.84 ± 0.21	5.59–6.11	3	5.76 ± 0.17	5.60–5.94	5	6.09 ± 0.39	5.53–6.61
BLLT	5.86	14	5.79 ± 0.33	5.08–6.30	20	6.03 ± 0.23	5.67–6.51	7	6.16 ± 0.24	5.86–6.46	3	6.17 ± 0.20	6.05–6.40	5	6.28 ± 0.35	5.81–6.64
BuB	5.26	14	4.99 ± 0.20	4.65–5.35	20	5.22 ± 0.19	4.91–5.51	7	5.25 ± 0.22	4.86–5.57	3	5.10 ± 0.18	4.91–5.27	5	5.27 ± 0.21	4.99–5.49
IFL	8.20	15	6.59 ± 0.41	6.04–7.32	22	7.29 ± 0.40	6.63–8.29	8	7.44 ± 0.35	7.11–8.20	3	7.88 ± 0.30	7.57–8.17	5	8.17 ± 0.33	7.76–8.49
AW1	5.99	15	5.70 ± 0.16	5.35–5.96	22	5.86 ± 0.18	5.43–6.15	8	5.93 ± 0.25	5.55–6.32	3	5.56 ± 0.03	5.54–5.60	5	5.79 ± 0.12	5.70–5.99
AW2	5.33	15	5.02 ± 0.23	4.60–5.44	22	5.28 ± 0.20	4.92–5.59	8	5.57 ± 0.19	5.33–5.84	3	5.31 ± 0.17	5.12–5.44	5	5.51 ± 0.32	5.10–5.94
ZL	17.49	14	14.82 ± 0.73	13.53–16.27	22	16.13 ± 0.63	15.14–17.30	8	16.69 ± 0.61	15.96–17.49	3	16.51 ± 0.65	15.91–17.20	5	17.41 ± 0.64	16.44–18.25
ZP	3.45	15	3.19 ± 0.23	2.83–3.62	22	3.54 ± 0.26	3.20–4.36	8	3.59 ± 0.16	3.31–3.81	3	3.83 ± 0.06	3.76–3.87	5	3.98 ± 0.07	3.91–4.07
ZB	16.54	14	14.85 ± 0.73	13.92–16.26	20	15.85 ± 0.42	15.26–16.98	8	16.16 ± 0.51	15.01–16.54	3	16.25 ± 0.54	15.81–16.86	5	16.95 ± 0.40	16.67–17.64
BB	14.46	14	13.53 ± 0.29	13.20–14.13	20	13.89 ± 0.35	13.30–14.68	7	13.99 ± 0.39	13.41–14.46	3	13.72 ± 0.32	13.45–14.08	5	14.33 ± 0.33	14.00–14.83
IOC	4.31	15	4.16 ± 0.14	3.81–4.39	22	4.12 ± 0.16	3.85–4.43	8	4.24 ± 0.13	4.05–4.44	3	4.05 ± 0.26	3.80–4.32	5	4.10 ± 0.21	3.85–4.43
RW2	5.63	15	4.72 ± 0.25	4.34–5.26	22	5.08 ± 0.31	4.46–5.53	8	5.08 ± 0.33	4.67–5.63	3	5.27 ± 0.15	5.10–5.36	5	5.62 ± 0.21	5.41–5.91
NL	14.75	15	12.31 ± 0.76	11.35–13.71	22	13.46 ± 0.60	12.45–14.48	8	13.92 ± 0.56	13.11–14.75	3	14.21 ± 0.89	13.19–14.83	4	14.37 ± 0.57	13.86–15.04
RL	13.33	15	11.07 ± 0.59	10.20–12.09	22	12.16 ± 0.51	11.30–13.23	8	12.38 ± 0.58	11.67–13.33	3	12.59 ± 0.73	11.77–13.16	4	13.08 ± 0.73	12.30–13.77
OL	11.41	14	9.73 ± 0.47	9.22–10.82	21	10.52 ± 0.30	9.96–10.97	8	10.85 ± 0.46	10.26–11.42	3	11.03 ± 0.29	10.71–11.29	5	11.12 ± 0.40	10.57–11.62
OCW	7.30	13	6.92 ± 0.32	6.33–7.31	20	7.05 ± 0.24	6.70–7.56	7	7.21 ± 0.15	7.01–7.39	3	7.01 ± 0.08	6.93–7.10	5	7.20 ± 0.15	7.02–7.35
ML	18.54	15	15.47 ± 0.64	14.66–16.96	22	16.71 ± 0.64	15.27–17.82	8	16.99 ± 0.77	16.15–18.54	3	17.12 ± 0.58	16.54–17.71	5	18.44 ± 0.72	17.35–19.09
mTRL	5.76	15	5.73 ± 0.19	5.45–6.12	22	5.77 ± 0.16	5.44–6.00	8	5.81 ± 0.15	5.55–5.96	3	5.77 ± 0.16	5.59–5.87	5	5.99 ± 0.30	5.65–6.33

ruta 23, CML 3636; 2 km S Lonco Luan, along Hwy 23, 3,860 ft, CML 3635; Cerrito Piñón, Ea. Collón Curá, 608 m, CNP 1945, 1946 - 1948; El Huecú, MACN-Ma 20980; Las Coloradas, CNP 1951, MACN-Ma 13482, 13627, 14568, 15527, 15528, 17724; Parque Nacional Laguna Blanca, MACN-Ma 14900, 23589; Piedra del Águila, Ea. Yuncón, 628 m, CNP 1941) provinces.

Distribution.—We studied specimens of *P. pehuенche* from several localities in southwestern Mendoza (Malargüe Department) and western Neuquén (Aluminé, Catán Lil, Collón Curá, Ñorquín, Picunches, and Zapala Departments) provinces, Argentina, south to the Río Limay. Most known localities of *P. pehuенche* new sp. are associated to mountain Andean ranges between 1,000 and 2,300 m (see Figure 1 in Jayat *et al.* 2021 and Figure 3). The new species appears to be sympatric (and syntopic) with *P. vaccarum* (see Jayat *et al.* 2021 for a revalidation of the specific status of this nominal form); both species were caught in the area of Bardas Blancas (Malargüe Department, Mendoza Province), but in contact areas representatives of *P. vaccarum* seem to prefer lower elevation habitats of the Monte de Valles y Mesetas ecoregion (*sensu* Burkart *et al.* 1999).

Etymology.—The specific epithet (a noun in apposition) honors the “Pehuenches”, native South American Andean people belonging to the Mapuche culture, which inhabits both sides of the Andes mountain range, in south-central Chile and southwestern Argentina. The geographic distribution of the new species mostly coincided with the northern geographic distribution of the Pehuenche people in Argentina.

Additional comments.—Phylogenetic relationships of *Phyllotis pehuенche* new sp. with the other species of the genus *Phyllotis* can be found in Ojeda *et al.* (2021). Additional information for the species, including an extended morphological description (and comparisons with other species of the genus), karyotype, and natural history can be found in the Supplementary Material S6 of Jayat *et al.* (2021).

With the information provided in this note, we comply with the provisions of the article 8.1.3.2 of The International Code of Zoological Nomenclature (ICZN 1999, 2012). This article, concerning the accessibility of electronic copies, established that for a work be regarded as published it must have been produced in an edition containing simulta-

neously obtainable copies by a method that assures widely accessible electronic copies with fixed content and layout. This criterion, which was not accomplished in the original publication of [Jayat et al. \(2021\)](#), is fulfilled here, which make the name available. As such, the year of publication and availability of *Phyllotis pehuенche* new sp. is 2022 (with the exact date corresponding to the date when this publication is being published in the sense of the Art. 21 of the Code) and as such they must be referred in future works.

Acknowledgements

We express our gratitude to C. Sciocia for her valuable assistance in nomenclatural issues. The comments of A. R. Percequillo and three anonymous reviewers substantially improve a first version of this work. G. D'Elía warned us about an error in the coordinates of the type locality reported in the original publication. Finally, we also want to correct an oversight made by [Jayat et al. \(2021\)](#); in that work, we forgot to thank the valuable collaboration of the curators and technical staff of the mammal collections studied, mainly to S. Gamboa, S. Lucero, and B. Bender. We apologize for the inadvertent omission.

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