

Additonal file

Ruiz-Ramoni et al. **Carnivoran fossils from the Pampean region (Argentina): Santiago Roth collections in Switzerland**

Table S1. Measurements (in mm) of the fossil material of felines collected by S. Roth and deposited in Swiss collections. * Not exact measurement.

Smilodon sp.										
Upper canine	Length mesio-distal C1	Width latero-medial C1								
MHNG GEPI V-3211(633/52)	41.86	20.63								
Humerus	Greatest length	Greatest transverse diameter of the proximal extremity	Greatest anteroposterior diameter of the proximal extremity	Transverse diameter at middle of the shaft	Anteroposterior diameter at the middle of the shaft	Greatest width of the distal extremity	Least anteroposterior diameter of articulating surface for ulna			
MHNG GEPI V-3215(634.18)	379.68	111.73	127.10	44.91	64.14	133.96	50.90			
Femur	Greatest length	Transverse diameter of the proximal end	Greatest anteroposterior diameter of the head	Transverse diameter of the shaft at middle	Anteroposterior diameter of the shaft at middle	Greatest width of the distal extremity	Greatest anteroposterior diameter distal extremity	Greatest width of rotular surface	Greatest width intercondylar notch	Greatest width of the articular surface of inner condely
MHNG GEPI V-3213(633/53)	376.08	109.40	51.69	52.73	40.42	89.57	90.59	59.63	10.39	39.72
cf. Smilodon sp.										
Tibia	Greatest length	Greatest transverse diameter of the proximal end	Transverse diameter of the shaft at middle	Greatest transverse diameter of the distal end	Greatest anteroposterior diameter of the distal end					
MHNG GEPI V-3214(633/52)	271.49	88.81	39.80	67.03	49.04					
Panthera onca										
Femur	Greatest length	Transverse diameter of the proximal end	Greatest anteroposterior diameter of the head	Transverse diameter of the shaft at middle	Anteroposterior diameter of the shaft at middle	Greatest width of the distal extremity	Greatest anteroposterior diameter distal extremity	Greatest width of rotular surface	Greatest width intercondylar notch	Greatest width of the articular surface of inner condely
MHNG GEPI V-3213(633/53)		70.94	33.22	30.48*	28.51*					
cf. Panthera sp.										
Humerus	Greatest length	Greatest transverse diameter of the proximal extremity	Greatest anteroposterior diameter of the proximal extremity	Transverse diameter at middle of the shaft	Anteroposterior diameter at the middle of the shaft	Greatest width of the distal extremity	Least anteroposterior diameter of articulating surface for ulna			
MHNG GEPI V-3202		55.95	42.96							

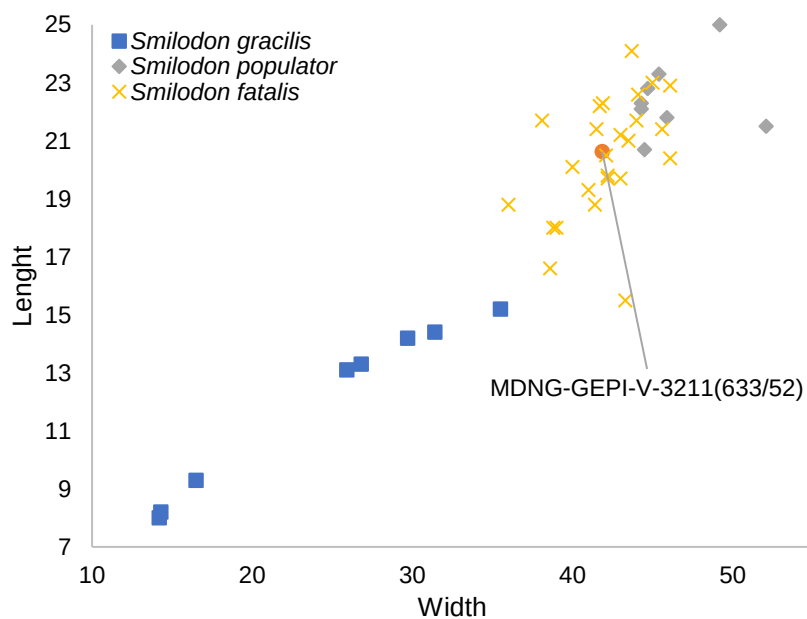


Fig. S1. Scatter plot of upper canine measurements (in mm) of MHNG GEPI V-3211(633/52) with respect to *Smilodon* species. Comparative data were obtained from Merriam and Stock (1932), Berta (1987), Kurtén and Werdelin (1990), and Prieto et al. (2010).

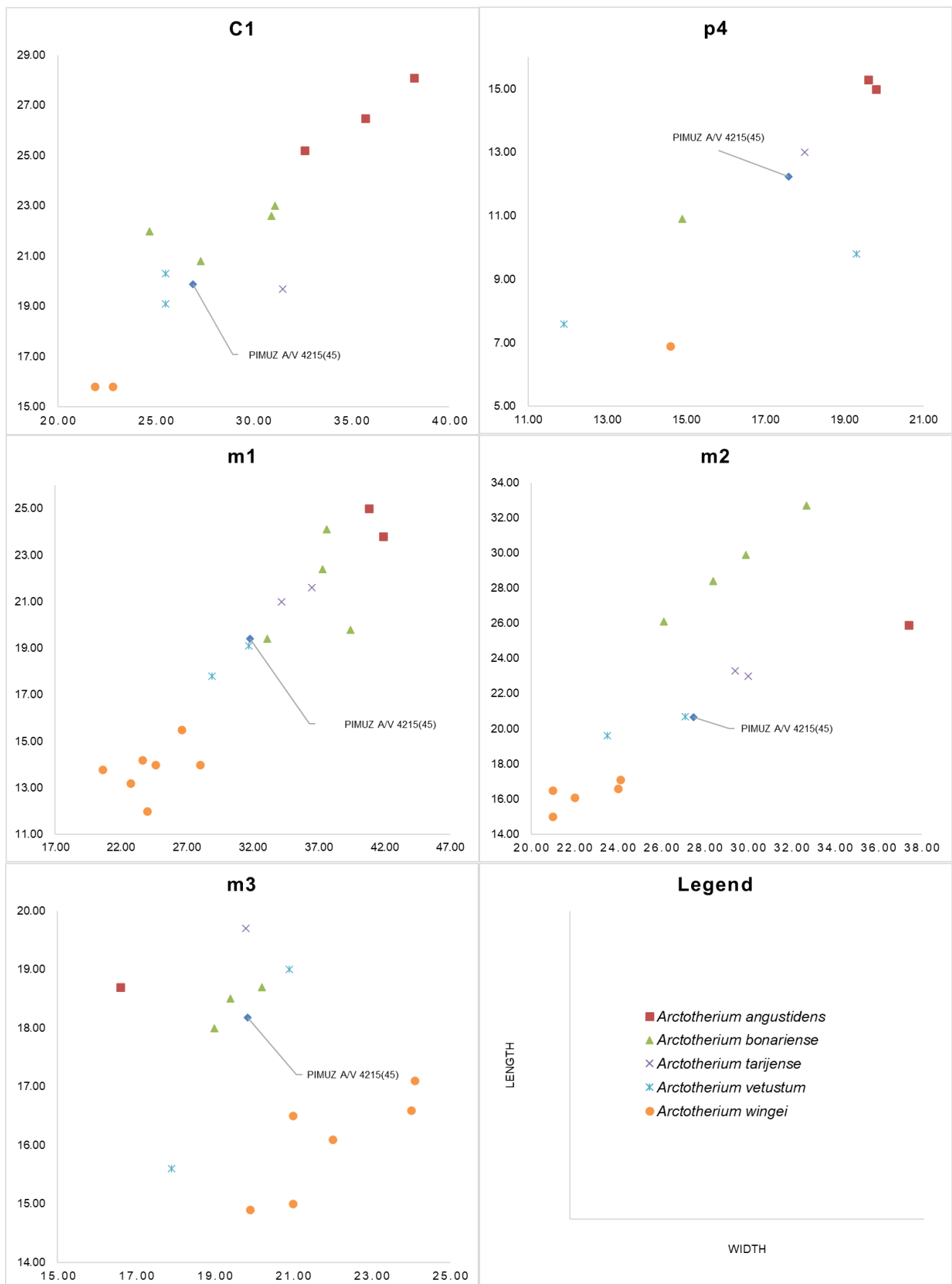


Fig. S2. Scatter plot of dental measurements (length x width in mm) of PIMUZ A/V 4215(45) with respect to fossil ursid species from South America. Comparative data were obtained from the personal database (DRR) and Rincón and Soibelzón (2007).



Fig. S3. Principal Component (PC) Analysis based on dental measurements, showing the position of PIMUZ A/V 4246 (141) with respect to other South American canids (including data from Prevosti et al., 2015).

	PC1	PC2	PC3
Standard deviation	0.2233	0.08221	0.04768
Proportion of Variance	0.7806	0.10582	0.03560
Cumulative Proportion	0.7806	0.88639	0.92199

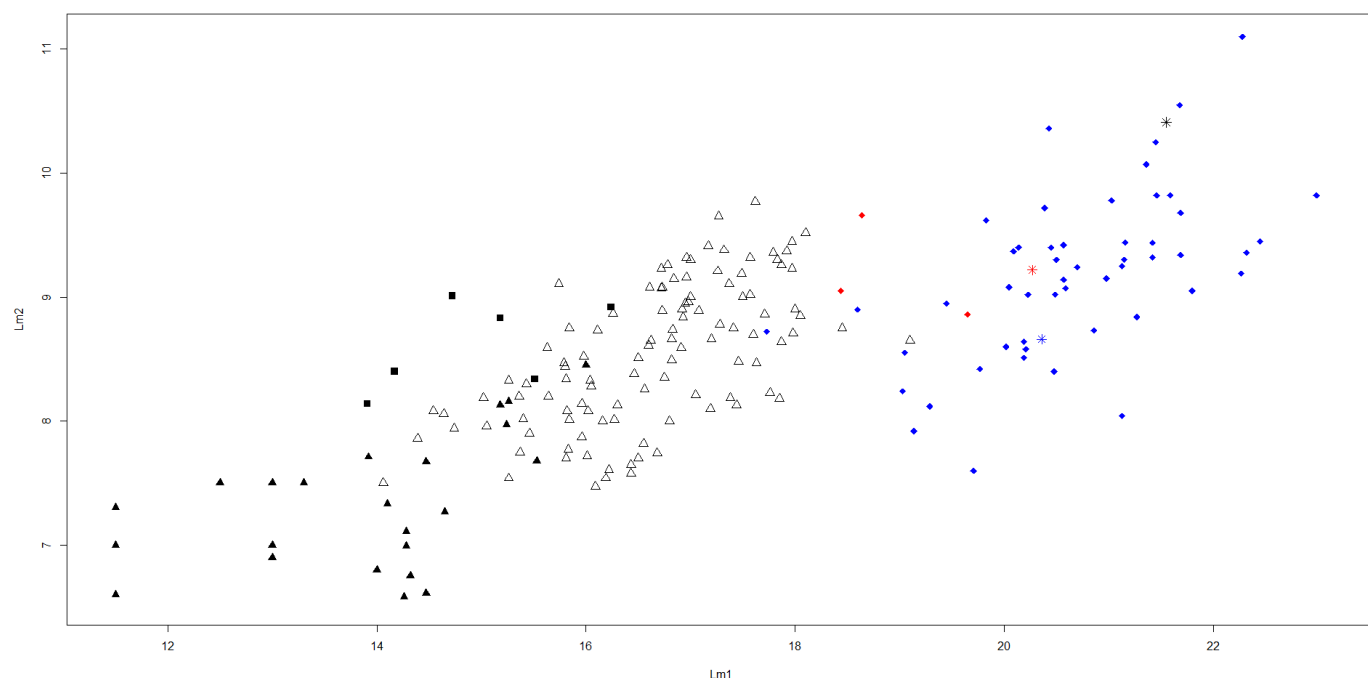


Fig. S4. Scatter plot showing the location of PIMUZ A/V 4231 (142) (red asterisk), PIMUZ A/V 4211 (246) (black asterisk), and PIMUZ A/V 4232 (143) (blue asterisk) with respect to the relationship between the length of m1 and m2 of some South American canids (including data from Prevosti et al., 2015). *Cerdocyon thous* (black square), *Dusicyon australis* (red rhombus), *Dusicyon avus* (blue rhombus), *Lycalopex culpaeus* (white triangle), *Lycalopex gymnocercus* + *Lycalopex griseus* + *Lycalopex sechurae* (black triangle).

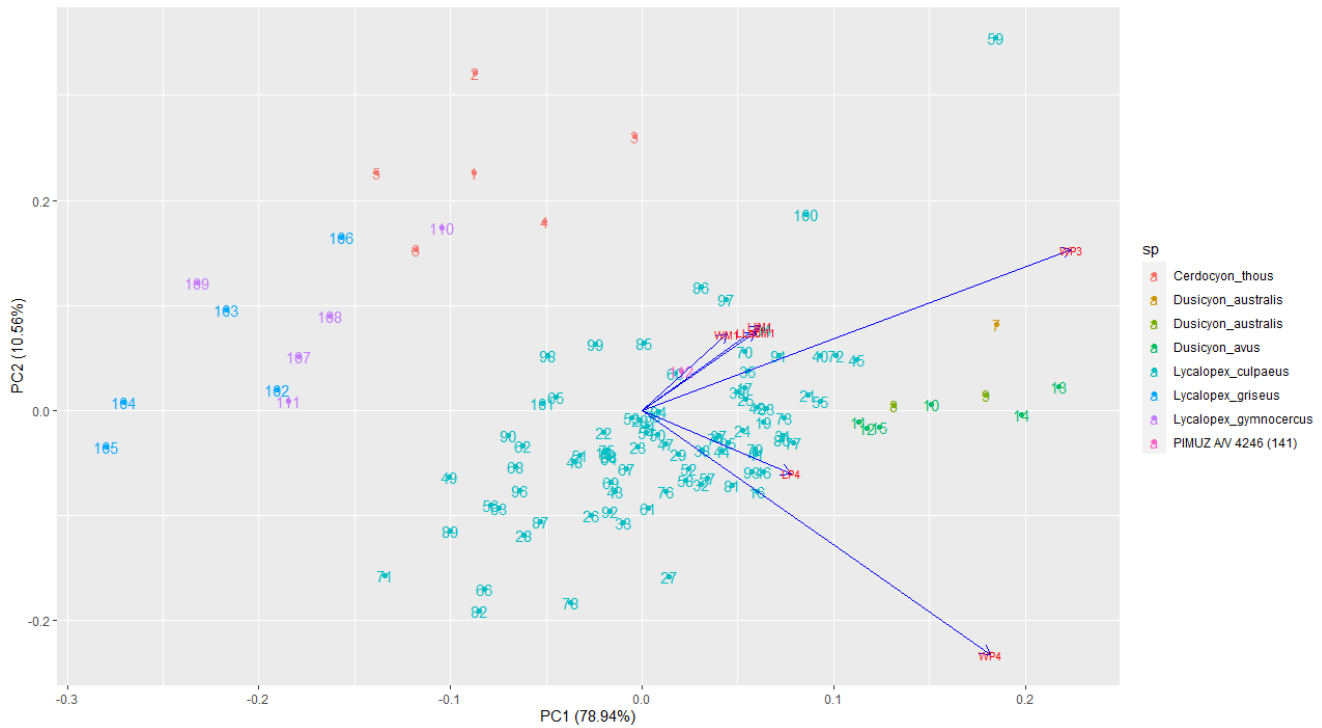


Fig. S5. Principal Component (PC) Analysis based on dental measurements, showing the position of the M1–P4 of PIMUZ A/V 4246 (141) with respect to other South American canids (including data from Prevosti et al., 2015).

	PC1	PC2	PC3
Standard deviation	0.1479	0.05409	0.04601
Proportion of Variance	0.7894	0.10555	0.07637
Cumulative Proportion	0.7894	0.89493	0.97130



Fig. S6. PIMUZ A/V 4267, incisor in lateral view.

Bibliographic reference

- Berta, A. (1987). Sabercat *Smilodon gracilis* from Florida and a discussion of its relationships (Mammalia, Felidae, Smilodontini).
- Kurtén B & L. Werdelin (1990) Relationships between North and South American *Smilodon*. *Journal of Vertebrate Paleontology* 10: 158-169.
- Merriam JC & C stock (1932) The Felidae of Rancho La Brea. Carnegie Institution of Washington Publication 422: 1-231.
- Prevosti, F. J., Ramírez, M. A., Schiaffini, M., Martín, F., Udrizar Sauthier, D. E., Carrera, M.,... & Pardiñas, U. F. (2015). Extinctions in near time: new radiocarbon dates point to a very recent disappearance of the South American fox *Dusicyon avus* (Carnivora: Canidae). *Biological Journal of the Linnean Society*, 116(3), 704–720.
- Prieto, A., Labarca, R., & Sierpe, V. (2010). Presence of *Smilodon populator* lund (Carnivora, Felidae, Machairodontinae) in the Late Pleistocene of southern Chilean Patagonia. *Revista Chilena de Historia Natural*, 83(2), 29.
- Rincón, A. D., & Soibelzon, L. H. (2007). The fossil record of the short-faced bears (Ursidae, Tremarctinae) from Venezuela. Systematic, biogeographic, and paleoecological implications. *Neues Jahrbuch für Geologie und Paläontologie-Abhandlungen*, 244.