

SUPPLEMENTARY DATA 2

Comparative anatomy, phylogeny and systematics of the Miocene giraffid *Decennatherium pachecoi* Crusafont, 1952 (Mammalia, Ruminantia, Pecora): state of the art

MARIA RIOS,<sup>\*</sup> ISRAEL M. SÁNCHEZ, and JORGE MORALES

Departamento de Paleobiología, Museo Nacional de Ciencias Naturales-CSIC, C/ José

Gutiérrez Abascal, 2, 28006 Madrid, Spain, maria.rios.iba@mncn.csic.es;

micromeryx@gmail.com; mcnm166@mncn.csic.es

<sup>\*</sup>Corresponding author.

SUPPLEMENTARY DATA 2. Statistics of the dimensions (in mm) of the dentition and postcranial skeleton of *Decennatherium pachecoi* from Los Valles de Fuentidueña, Nombrevilla, Relea, Pedrajas de San Esteban (Crusafont, 1952), Masia del Barbo, Masia de La Roma (Alcalá, 1994) and Campisabalos (Crusafont, 1966).

TABLE 1S. Statistics of the dimensions of the decidual dentition of *D. pachecoi* in mm. **Abbreviations:** **max**, maximum value; **min**, minimum value; **N**, number of specimens; **SD**, standard deviation.

d2					
	N	min	max	Media	SD
Length	2	20.50	24.30	22.4000	2.68701
Width	2	12.50	13.30	12.9000	0.56569
d3					
	N	min	max	Media	SD
Length	1	23.69	23.69	23.6900	
Width	2	11.99	12.27	12.1300	0.19799
d4					
	N	min	max	Media	SD
Length	3	24.35	38.09	33.2267	7.69916
Width	3	15.40	18.33	17.3167	1.66079

TABLE 2S. Statistics of the dimensions of the lower permanent dentition of *D. pachecoi* in mm. **Abbreviations:** **max**, maximum value; **min**, minimum value; **N**, number of specimens; **SD**, standard deviation.

p2					
	N	min	max	Media	SD
Length	15	22.52	27.50	25.4040	1.63468
Width	18	12.92	16.40	14.1211	0.86668
p3					
	N	min	max	Media	SD
Length	15	28.15	31.60	29.7613	1.08703
Width	15	16.36	21.30	17.8707	1.30263
p4					
	N	min	max	Media	SD

Length	11	27.73	35.00	32.2209	2.29404
Width	12	17.50	25.05	21.7383	2.18460
m1					
	N	min	max	Media	SD
Length	8	34.50	38.60	37.4000	1.33524
Width	7	24.60	28.50	26.1714	1.41506
m2					
	N	min	max	Media	SD
Length	7	38.68	42.80	40.6243	1.65702
Width	4	27.80	29.00	28.4250	0.61305
m3					
	N	min	max	Media	SD
Length	10	47.50	56.60	53.8140	3.02061
Width	8	24.00	28.70	25.9250	1.55449

TABLE 3S. Statistics of the dimensions of the upper permanent dentition of *D. pachecoi* in mm.  
**Abbreviations:** **max**, maximum value; **min**, minimum value; **N**, number of specimens; **SD**, standard deviation.

P4					
	N	min	max	Media	SD
Length	6	25.00	30.00	26.9183	1.77088
Width	4	33.15	34.20	33.6625	0.51539
M1					
	N	min	max	Media	SD
Length	5	33.45	40.00	37.6900	2.88193
Width	3	33.71	37.00	35.9033	1.89948
M2					
	N	min	max	Media	SD
Length	5	36.23	45.00	40.2460	3.77195
Width	4	33.97	41.70	38.7425	3.58774
M3					

	N	min	max	Media	SD
Length	5	37.33	43.50	40.1660	2.30440
Width	4	35.51	39.40	37.1525	1.65097

TABLE 4S. Statistics of the dimensions of the canines of *D. pachecoi* in mm. **Abbreviations:** **max**, maximum value; **min**, minimum value; **N**, number of specimens; **SD**, standard deviation.

Canine					
	N	min	max	Media	SD
Length	7	17.00	23.00	20.1000	2.29565
Width	7	20.00	28.00	24.2857	2.81154

TABLE 5S. Statistics of the dimensions of the incisors of *D. pachecoi* in mm. **Abbreviations:** **max**, maximum value; **min**, minimum value; **N**, number of specimens; **SD**, standard deviation.

Incisor					
	N	min	max	Media	SD
Length	17	14.10	20.00	16.9471	1.52525
Width	18	20.00	30.00	26.7167	2.53638

TABLE 6S. Statistics of the dimensions of the scapula of *D. pachecoi* in mm. **Abbreviations:** **APD**, anteroposterior diameter; **DT**, transversal diameter; **Glen. Cav**, glenoid cavity; **max**, maximum value; **min**, minimum value; **N**, number of specimens; **SD**, standard deviation.

Scapula					
	N	min	max	Media	SD
Min neck APD	1	90.67	90.67	90.6700	
Distal TD	1	57.37	57.37	57.3700	
Distal APD	1	127.21	127.21	127.2100	
Glen. cav. APD	1	87	87	86.54	

TABLE 7S. Statistics of the dimensions of the humerus of *D. pachecoi* in mm. **Abbreviations:** **APD**, anteroposterior diameter; **Diaph**, daphysis; **DT**, transversal diameter; **max**, maximum value; **min**, minimum value; **N**, number of specimens; **SD**, standard deviation.

Humerus					
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	N	min	max	Media	SD
Total length	1	405.37	405.37	405.3700	
Functional length	1	379.58	379.58	379.5800	
Diaph. TD	4	49.34	61.49	54.2450	5.16538
Diaph. APD	4	56	64	60.89	4.027
Distal TD	5	98.05	112.49	103.9060	5.64045
Distal APD	5	60.16	106.79	83.5880	18.27453
Proximal TD	1	127.64	127.64	127.6400	
Proximal APD	1	139	139	139.38	
Trochlea APD	6	43	55	48.62	4.470

TABLE 8S Statistics of the dimensions of the radius of *D. pachecoi* in mm. **Abbreviations:** **Anc. Proc.**, anconeal process; **APD**, anteroposterior diameter; **Diaph**, daphysis; **DT**, transversal diameter; **max**, maximum value; **min**, minimum value; **N**, number of specimens; **Olec**, olecranon; **SD**, standard deviation.

Radius-ulna					
	N	min	max	Media	SD
Diaph. TD	3	51.88	55.93	54.0133	2.03367
Diaph. APD	3	38.32	42.78	39.9367	2.47011
Distal TD	1	93.07	93.07	93.0700	
Distal APD	1	57	57	57.27	
Proximal TD	1	93.29	93.29	93.2900	
Proximal APD	1	53.36	53.36	53.3600	
Olec. APD	1	77.60	77.60	77.6000	
Olec. Min APD	1	86	86	86.18	
Olec. Length	1	134	134	134.00	
Anc. Proc. APD	1	104	104	104.26	

TABLE 9S. Statistics of the dimensions of the carpals of *D. pachecoi* in mm. **Abbreviations:** **APD**, anteroposterior diameter; **DT**, transversal diameter; **max**, maximum value; **min**, minimum value; **N**, number of specimens; **SD**, standard deviation.

Scaphoid					
	N	min	max	Media	SD
Anterior Height	17	34.99	41.78	37.6800	1.66612
Proximal TD	16	22.33	34.48	28.4256	3.02607

APD	15	50.32	60.72	56.4127	2.89647
Semilunate					
	N	min	max	Media	SD
Anterior Height	16	34.69	40.15	36.9894	1.68074
Proximal TD	16	28.45	37.66	33.8306	2.48087
Distal TD	11	23.50	31.85	28.0855	2.57767
APD	13	47	57	53.11	3.058
Pyramidal					
	N	min	max	Media	SD
Anterior Height	17	34.94	45.69	39.4424	2.24055
Maximum Height	14	46.54	55.28	51.5136	2.81513
TD	16	21.12	42.80	32.4350	4.89769
APD	13	42	51	45.10	2.345
Pisiform					
	N	min	max	Media	SD
Posterior Height	5	28.17	32.25	30.0300	1.45576
APD	5	35.19	40.00	37.9400	2.14307
Magnotrapezoid					
	N	min	max	Media	SD
Anterior TD	13	43.24	50.75	47.7377	2.15361
Posterior TD	11	36.22	43.15	40.3027	2.42293
APD	14	45.42	56.19	50.0979	3.01241
Anterior Height	16	22	27	24.05	1.450
Unciform					
	N	min	max	Media	SD
Anterior Height	14	26.35	29.35	27.7879	0.87552
Semilunate Facet TD	14	10.89	14.21	12.5800	0.97353
Pyramidal Facet TD	14	22.18	29.22	25.1043	2.24339
Proximal TD	14	31	39	34.72	2.656
Distal TD	14	25.65	36.18	31.8329	3.49472
APD	11	41.47	50.28	46.2391	3.16475
Maximum Height	14	28.48	36.39	31.7371	2.11678

TABLE 10S. Statistics of the dimensions of the metacarpal III-IV of *D. pachecoi* in mm. **Abbreviations:** **APD**, anteroposterior diameter; **Diaph**, diaphysis; **DT**, transversal diameter; **max**, maximum value; **min**, minimum value; **N**, number of specimens; **SD**, standard deviation.

Mc					
	N	min	max	Media	SD
Total Length	1	391.00	391.00	391.0000	
Proximal TD	2	73.32	90.00	81.6600	11.79454
Proximal APD	2	50.23	60.00	55.1150	6.90843
Diaph. TD	2	36	45	40.34	5.890
Diaph. APD	2	40.14	53.00	46.5700	9.09339
Distal TD	1	73.78	73.78	73.7800	
Distal APD	1	45.31	45.31	45.3100	
Supraarticular Distal TD	1	73	73	73.32	
Uniform facet TD	1	26	26	25.72	
Magnetrapezoid facet TD	1	45	45	44.64	

TABLE 11S. Statistics of the dimensions of the femur of *D. pachecoi* in mm. **Abbreviations:** **APD**, anteroposterior diameter; **Diaph**, diaphysis; **DT**, transversal diameter; **max**, maximum value; **min**, minimum value; **N**, number of specimens; **SD**, standard deviation; **Troc**, trochlea.

Femur					
	N	min	max	Media	SD
Distal TD	1	82.09	82.09	82.0900	
Distal APD	1	81.15	81.15	81.1500	
Troc. TD	1	32.71	32.71	32.7100	

TABLE 12S. Statistics of the dimensions of the tibia of *D. pachecoi* in mm. **Abbreviations:** **APD**, anteroposterior diameter; **Diaph**, diaphysis; **DT**, transversal diameter; **Fun**, functional; **max**, maximum value; **min**, minimum value; **N**, number of specimens; **SD**, standard deviation.

Tibia					
	N	min	max	Media	SD
Toral length	1	497.78	497.78	497.7800	
Functional length	1	434.39	434.39	434.3900	
Diaph. TD	4	52.07	59.03	54.4250	3.16373

Diaph. APD	4	37	43	40.14	2.345
Distal TD	5	72.02	82.74	79.1520	4.23894
Distal APD	6	58.75	65.47	62.1167	2.33871
Proximal TD	1	121.68	121.68	121.6800	
Proximal APD	1	127	127	126.89	
Fun. Distal TD	6	54	58	56.01	1.443
Fun. Distal APD	6	46	52	48.71	2.538

TABLE 13S. Statistics of the dimensions of the tarsals of *D. pachecoi* in mm. **Abbreviations:** **APD**, anteroposterior diameter; **Diaph**, daphysis; **DT**, transversal diameter; **max**, maximum value; **min**, minimum value; **N**, number of specimens; **s**, sustentaculum; **SD**, standard deviation; **t.c**, tuber calcis.

Maleolar					
	N	min	max	Media	SD
Maximum Height	13	28.39	33.67	30.4146	1.61896
APD	16	39.61	45.93	43.7481	1.66615
TD	16	18.36	22.98	20.5850	1.23374
Posterior Height	15	26	31	27.60	1.482
Calcaneus					
	N	min	max	Media	SD
Total Length	6	147.76	184.41	171.5150	13.05981
t.c. TD	10	32.41	45.21	37.9300	4.60758
t.c. APD	9	35.17	53.36	44.0322	6.34751
Diaph. TD	10	23	30	25.41	2.186
Diaph. APD	10	42.45	49.35	46.0490	1.87341
s. Length	8	87.10	124.83	110.4475	13.45734
s. TD	11	44.31	61.77	55.4273	4.99228
Astragalus					
	N	min	max	Media	SD
Medial Length	20	71.95	83.37	76.9455	2.95666
Lateral Length	26	79.39	92.00	85.7446	3.84449
Medial APD	19	40.42	52.94	46.6547	3.58638
Lateral APD	18	36	54	46.57	3.782
Distal DT	26	46.29	66.00	54.2054	4.31082
Navicular-cuboid					
	N	min	max	Media	SD



TD	10	63.89	74.05	68.3830	3.58083
APD	7	62.81	79.88	71.0657	5.94279
Cuboid Anterior Height	11	29.13	35.73	32.2036	2.52043
Navicular Anterior Height	11	20	24	21.80	1.360
Total Anterior Height	10	34.51	44.08	39.5130	3.11699
Posterior Height	7	42.70	56.29	51.8371	4.88306
Astragalus Articular Facet TD	9	51.19	57.31	54.1200	1.87981
Ectomesocuneiform					
	N	min	max	Media	SD
Anterior Height	14	13.90	18.30	16.4164	1.32187
TD	14	24.91	49.30	30.1229	5.72442
APD	13	30.00	50.42	45.3085	5.25498

TABLE 14S. Statistics of the dimensions of the Metatarsal III-IV of *D. pachecoi* in mm. **Abbreviations:** **APD**, anteroposterior diameter; **Diaph**, daphysis; **DT**, transversal diameter; **Fun**, functional; **max**, maximum value; **min**, minimum value; **N**, number of specimens; **SD**, standard deviation.

Mt					
	N	min	max	Media	SD
Total Length	2	406.14	427.50	416.8200	15.10380
Diaph. TD	9	33.38	42.46	37.0189	2.80514
Diaph. APD	9	36.22	47.00	40.8844	3.77036
Distal TD	2	66	77	71.66	7.446
Distal APD	3	42.29	47.54	44.5400	2.70416
Proximal TD	7	57.42	74.12	62.3457	5.85565
Proximal APD	9	54.73	67.00	61.0556	4.27013
Suprarticular TD	3	61	78	68.17	9.121
Functional Length	2	397	423	410.08	18.420

TABLE 15S. Statistics of the dimensions of the phalanges of *D. pachecoi* in mm. **Abbreviations:** **APD**, anteroposterior diameter; **Diaph**, daphysis; **DT**, transversal diameter; **Fun**, functional; **N**, number of specimens; **max**, maximum value; **min**, minimum value; **SD**, standard deviation.

1st phalanx					
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	N	min	max	Media	SD
Total Length	23	80.50	99.13	89.6957	4.80776
Proximal TD	25	31.94	45.00	38.1852	3.68995
Proximal APD	25	38.40	46.51	42.2688	2.46146
Distal TD	30	25	37	32.11	2.836
Distal APD	28	23.05	30.40	26.9036	1.80855
Diaph. TD	23	26.45	40.00	29.6883	3.01099
Diaph. APD	21	24.93	31.10	28.2419	1.86837
2nd phalanx					
	N	min	max	Media	SD
Total Length	35	43.24	51.94	47.8629	2.34356
Proximal TD	39	28.40	38.10	32.0392	2.62482
Proximal APD	38	31.86	40.63	36.2918	2.11578
Distal TD	33	24	34	29.45	2.461
Distal APD	34	29.95	37.44	34.0135	2.17941
Diaph. TD	39	23.74	35.38	28.2556	2.91668
3rd phalanx					
	N	min	max	Media	SD
Total Length	1	72.84	72.84	72.8400	
Dorsal Length	1	56.73	56.73	56.7300	
Proximal total APD	4	43.07	48.00	45.1525	2.18767
Fun. TD	6	22	29	25.80	2.631
Fun. APD	3	29.28	33.99	32.0967	2.48705

TABLE 16S. Statistics of the dimensions of the sesamoids of *D. pachecoi* in mm. **Abbreviations:** **APD**, anteroposterior diameter; **DT**, transversal diameter; **max**, maximum value; **min**, minimum value; **N**, number of specimens; **SD**, standard deviation.

SED					
	N	min	max	Media	SD
Total TD	4	25.55	37.68	32.3600	5.02709
Interdigital facet TD	4	14.42	21.76	18.5775	3.28120
External facet TD	4	8.79	14.65	11.7975	2.59141
Maximum APD	4	11	19	15.62	3.365
Maximum Proximodistal length	3	14.21	20.06	16.7600	2.99625

SEP external					
	N	min	max	Media	SD
Total TD	3	13.39	15.61	14.6633	1.14548
Maximum APD	3	21.06	22.51	21.7933	0.72514
SEP interdigital					
	N	min	max	Media	SD
Total TD	5	14.04	17.02	15.3060	1.13461
Maximum APD	5	15.54	20.75	17.9980	2.04692
Maximum Proximodistal length	5	29.58	38.35	32.8380	3.67489

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