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SUPPLEMENTARY ONLINE MATERIAL FOR

Evaluating the utility of linear measurements to identify isolated tooth loci of extinct Hyracoidea

Natasha S. Vitek and Patricia M. Princehouse

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Supplementary Online Material

SOM 1.

List of sampled specimens

Table 1. Tip dates

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SOM 2. Input Data

Table 1. Length and width measurements of hyracoid molars collected from the published literature (associated citations listed in SOM 1 References);

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Table 2. Measurements collected from three dimensional models of upper molars of *Procavia capensis*;

available at http://app.pan.pl/SOM/app69-Vitek_Princehouse_SOM/SOM2_table2.xlsx

Table 3. Measurements collected from three dimensional models of lower molars of *Procavia capensis*;

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Table 4. Measurements collected from three dimensional models of upper and lower molars of fossils from the Fayum, Egypt;

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Table 5. Measurements copied from Gutierrez and Rasmussen, 2009, describing *Meroehyrax kyongoi*, used in a case study;

available at http://app.pan.pl/SOM/app69-Vitek_Princehouse_SOM/SOM2_table5.xlsx

SOM 1. Sampled specimens

***Procvavia capensis*, upper and lower molars:**

UMZC H5101A; [doi:10.17602/M2/M22988](https://doi.org/10.17602/M2/M22988)
UMZC H5101B; [doi:10.17602/M2/M22852](https://doi.org/10.17602/M2/M22852)
UMZC H5081B; [doi:10.17602/M2/M22823](https://doi.org/10.17602/M2/M22823)
UMZC H5051A; [doi:10.17602/M2/M22987](https://doi.org/10.17602/M2/M22987)
UMZC H4981F; [doi:10.17602/M2/M22791](https://doi.org/10.17602/M2/M22791)
UMZC H4981E; [doi:10.17602/M2/M22986](https://doi.org/10.17602/M2/M22986)
UMZC H4981D; [doi:10.17602/M2/M22985](https://doi.org/10.17602/M2/M22985)
UMZC H4981C; [doi:10.17602/M2/M22982](https://doi.org/10.17602/M2/M22982)
UMZC H4980K; [doi:10.17602/M2/M22984](https://doi.org/10.17602/M2/M22984)
UMZC H4980J; [doi:10.17602/M2/M22983](https://doi.org/10.17602/M2/M22983)

Fossils, lower molars

DPC 2150, *Saghatherium humarum*; ARK ID: ark:/87602/m4/M103969
DPC 2763, *Thyrohyrax domorictus*; ARK ID: ark:/87602/m4/M103971
DPC 4057, *Thyrohyrax domorictus*; ARK ID: ark:/87602/m4/M80385
DPC 4625, *Pachyhyrax crassidentatus*; ARK ID: ark:/87602/m4/M104115
DPC 5283, *Megalohyrax eocaenus*; ARK ID: ark:/87602/m4/M104021
DPC 5318, *Saghatherium antiquum*; ARK ID: ark:/87602/m4/M80393
DPC 7369, *Thyrohyrax domorictus*; ARK ID: ark:/87602/m4/M104159
DPC 7514, *Pachyhyrax crassidentatus*; ARK ID: ark:/87602/m4/M104788
DPC 11451, *Saghatherium boweni*; ARK ID: ark:/87602/m4/M81587
DPC 12048, *Saghatherium boweni*; ARK ID: ark:/87602/m4/M81573
DPC 13282, *Saghatherium boweni*; ARK ID: ark:/87602/m4/M82071
DPC 13921, *Thyrohyrax meyeri*; ARK ID: ark:/87602/m4/M82060
DPC 16845, *Saghatherium boweni*; ARK ID: ark:/87602/m4/M82073
DPC 17017, *Thyrohyrax meyeri*; ARK ID: ark:/87602/m4/M81519
DPC 17675, *Thyrohyrax meyeri*; ARK ID: ark:/87602/m4/M81579
DPC 20509, *Saghatherium boweni*; ARK ID: ark:/87602/m4/M81559
DPC 20591, *Saghatherium antiquum*; ARK ID: ark:/87602/m4/M80396
DPC 20777, *Thyrohyrax meyeri*; ARK ID: ark:/87602/m4/M81517
DPC 21027, *Thyrohyrax litholagus*; ARK ID: ark:/87602/m4/M81584
DPC 2363A, *Geniohyus magnus*; ARK ID: ark:/87602/m4/M103991

Fossils, Upper Molars:

DPC 4000, *Thyrohyrax domorictus*; ARK ID: ark:/87602/m4/M103973
DPC 4876, *Pachyhyrax crassidentatus*; ARK ID: ark:/87602/m4/M104003
DPC 4880, *Megalohyrax eocaenus*; ARK ID: ark:/87602/m4/M104141
DPC 5314, *Saghatherium humarum*; ARK ID: ark:/87602/m4/M103975
DPC 8891, *Thyrohyrax meyeri*; ARK ID: ark:/87602/m4/M104112
DPC 11548, *Saghatherium boweni*; ARK ID: ark:/87602/m4/M81991
DPC 12009, *Saghatherium boweni*; ARK ID: ark:/87602/m4/M83219
DPC 12061, *Saghatherium boweni*; ARK ID: ark:/87602/m4/M83222
DPC 13050, *Saghatherium boweni*; ARK ID: ark:/87602/m4/M83227
DPC 14440, *Saghatherium boweni*; ARK ID: ark:/87602/m4/M83266
DPC 15587, *Thyrohyrax meyeri*; ARK ID: ark:/87602/m4/M104159
DPC 16736, *Thyrohyrax meyeri*; ARK ID: ark:/87602/m4/M83125
DPC 23087, *Thyrohyrax meyeri*; ARK ID: ark:/87602/m4/M833

SOM 1. Table 1. Tip Dates

Absolute ages for scaling the hyracoid segment of the phylogenetic tree of Cooper et al. (2014), as well as the citations used to estimate absolute age ranges. Ages are derived from relative ages of sites matched to the geologic time scale of Walker (2019).

Genus	Species	min	max	Citations
<i>Afrohyrax</i>	<i>championi</i>	13.76	19.6	Site lists: Pickford 2009; Leakey et al. 2011. Ages for sites: Michel et al. 2020; Leakey et al. 2011; Drake et al. 1988; Feibel and Brown 1991; Cote et al. 2018; Tsujikawa and Pickford 2006; Werdelin 2010
<i>Antilohyrax</i>	<i>pectidens</i>	32	35	Rasmussen and Simons 2000; Seiffert 2006
<i>Bunohyrax</i>	<i>fajumensis</i>	29.5	35	Matsumoto 1926; Rasmussen and Simons 1988; Seiffert 2006
<i>Bunohyrax</i>	<i>major</i>	32	35	Matsumoto 1926; Seiffert 2006
<i>Dimatherium</i>	<i>patnaiki</i>	36.4	37.2	Seiffert 2006; Barrow et al. 2010
<i>Geniohyus</i>	<i>diphycus</i>	29.5	35	Matsumoto 1926; Seiffert 2006
<i>Geniohyus</i>	<i>mirus</i>	32	35	Matsumoto 1926; Seiffert 2006
<i>Megalohyrax</i>	<i>eocaenus</i>	29.5	35	Matsumoto 1926; Seiffert 2006
<i>Megalohyrax</i>	sp. nov.	33.9	35	Seiffert 2003; Seiffert 2006
<i>Microhyrax</i>	<i>lavocati</i>	45	49	Coster et al. 2012; Sudre 1979; Heritage and Seiffert 2022
<i>Namahyrax</i>	<i>corvus</i>	37.8	41.2	Pickford 2008
<i>Pachyhyrax</i>	<i>crassidentatus</i>	29.5	32	Rasmussen and Simons 1988; Seiffert 2006
<i>Procavia</i>	<i>capensis</i>	0	2	extant
<i>Prohyrax</i>	<i>hendeyi</i>	15	17	Pickford 1994
<i>Saghatherium</i>	<i>antiquum</i>	32	33.9	Matsumoto 1926; Seiffert 2006
<i>Saghatherium</i>	<i>boweni</i>	33.9	35	Rasmussen and Simons 1991; Seiffert 2006
<i>Seggeurius</i>	<i>amourensis</i>	54	56	Coster et al. 2012; Crochet 1986
<i>Selenohyrax</i>	<i>chatrathi</i>	29.5	32	Rasmussen and Simons 1988; Seiffert 2006
<i>Thyrohyrax</i>	<i>domorictus</i>	29.5	32	Rasmussen and Simons 1988; Seiffert 2006
<i>Thyrohyrax</i>	<i>litholagus</i>	33.9	35	Rasmussen and Simons 1991; Seiffert 2006
<i>Thyrohyrax</i>	<i>meyeri</i>	33.9	35	Rasmussen and Simons 1991; Seiffert 2006
<i>Thyrohyrax</i>	<i>pygmaeus</i>	32	35	Rasmussen and Simons 1991; Seiffert 2006
<i>Titanohyrax</i>	<i>andrewsi</i>	32	35	Matsumoto 1922; Seiffert 2006
<i>Titanohyrax</i>	<i>angustidens</i>	29.5	32	Rasmussen and Simons 1988; Seiffert 2006
<i>Titanohyrax</i>	sp. nov.	33.9	35	Seiffert 2006; Rasmussen and Gutierrez 2010

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