Supplementary Materials for

More than one species of the naked mole-rat, a new biomedical model

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This PDF file includes:

Supplementary Text

Museum samples from Somalia

The museum tissue sample from Luuq (3.8084°N, 42.5447°E) was provided by the Zoological Museum of Moscow University (catalogue no. ZMMU-S-111344).

We also attempted DNA isolation and *CYTB* gene sequencing from several other Somali specimens, but without success. Samples from two specimens were provided by the Natural History Museum, London, and for both we attempted sequencing of complete mitochondrial DNA using a genome skimming approach (1). A single-strand DNA genomic library was prepared using the xGenTM ssDNA & Low-Input DNA Library Preparation Kit (IDT, Inc., US) and sequenced using Illumina technology at Novogene, UK (approximately 5 million of 150 bp paired-end reads). The obtained reads were mapped to *Heterocephalus* mitochondrial genome in Geneious v9.0.5. The holotype of *H. phillipsi* (NHMUK ZD 1885.12.10.1, Gerlogobie 6.8833° N, 44.9167° E) did not yield any usable DNA. The yield from another specimen (NHMUK ZD-1987.950, Balcad, 2.3600°N 45.3860°E) was low, and most reads were of insufficient quality. The resulting fragments formed a separate lineage in the genus phylogeny; however, it was not possible to determine whether this represented sequencing artefacts or a genuinely distinct lineage.

Four additional specimens were provided by Museo Storia Naturale - La Specola of the University of Florence: MZUF 1968 (Balcad, 2.3600° N 45.3860° E), 2827 (Afmadow, 0.5150° N 42.0757° E) and 10034, 10037 (15 km N of Afgoye, 2.2816° N 45.1156° E). We attempted to amplify short *CYTB* fragments from these specimens, using specifically designed primers (fw833: TAYGCYATYYTHCGATCYAT, rev927: ATYATRCTKCGTTGYTTHGATG), which were conservative across African mole-rats, encompassed reasonably variable region and defined sequence of length fitting the degree of DNA fragmentation observed in the samples. Despite prior success extracting DNA from similar materials, we were unable to obtain any usable DNA in this case, possibly due to past formalin-treatment of the carcasses.

Supplementary Figures

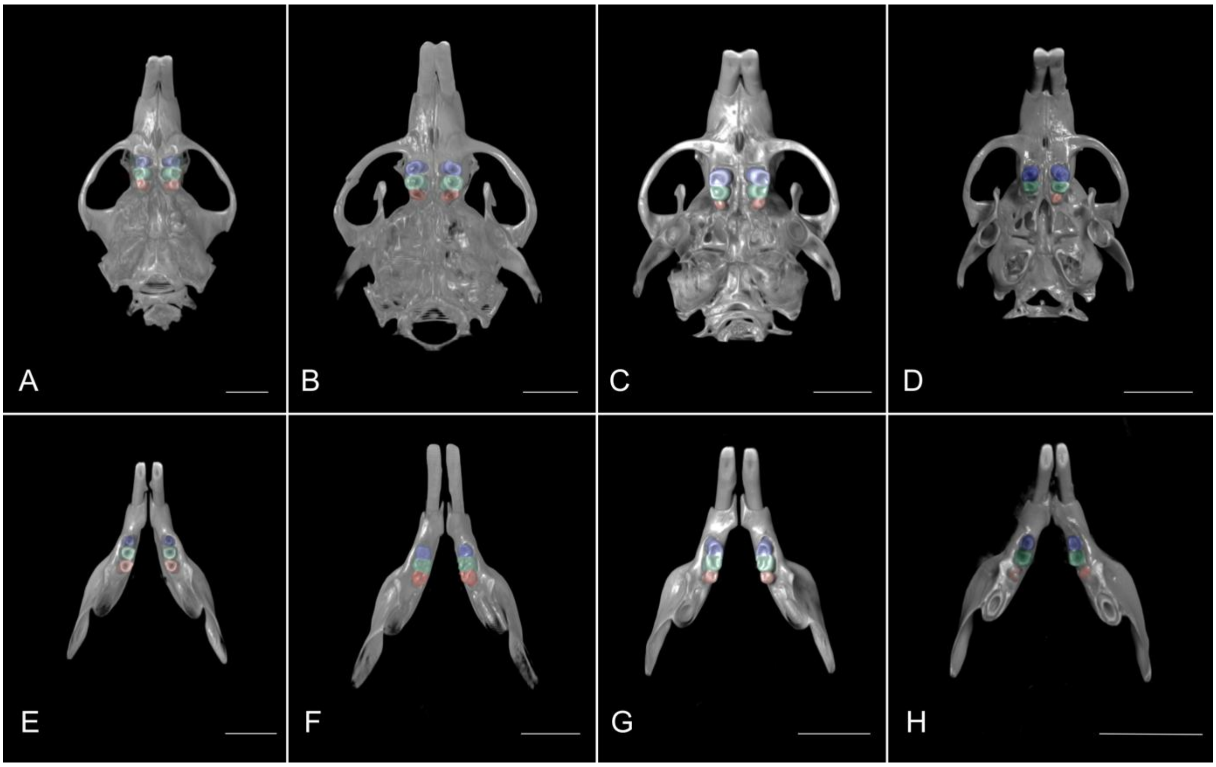

Figure S1. Skull and molar morphology of naked mole rats. *H. g. glaber* SOM585 (A, E) and *H. g. ansorgei* ETH1081 (B, F). All upper and lower molars are present and well developed. In *H. phillipsi* SOM558 (C, G) are molars M^3 and M_3 (red) rather small. In *H. phillipsi* SOM512 (D, H) is visible the complete absence of M^3 on the right side and a very small partly erupted M^3 (red) on the left side. All lower molars are present, nevertheless both M_3 are again very small and partly hidden in the mandible. M^1 (blue), M^2 (green), and M^3 (red). Scale bars, 5 mm.

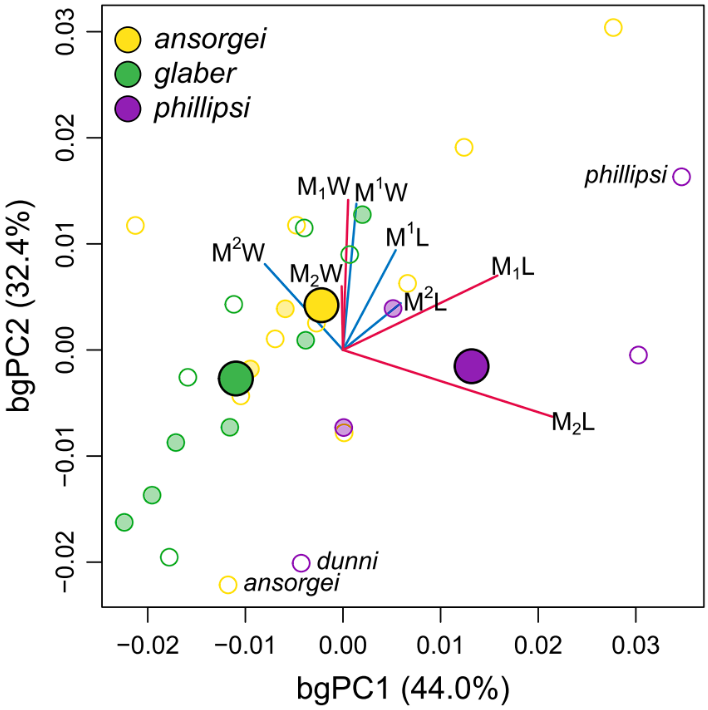

Figure S2. Molar shape differentiation. Between-group principal component analysis of the length and width diameters of upper (M^1 and M^2) and lower (M_1 and M_2) molars with ordination of individuals, percentage of explained individual variation, and lines indicating variable loadings (upper molars in blue, lower in red). The dataset combines our morphological data with data from (2); see Table S7. The holotypes are labelled by specific epithets. The circles representing genotyped specimens are filled with semi-transparent colour.

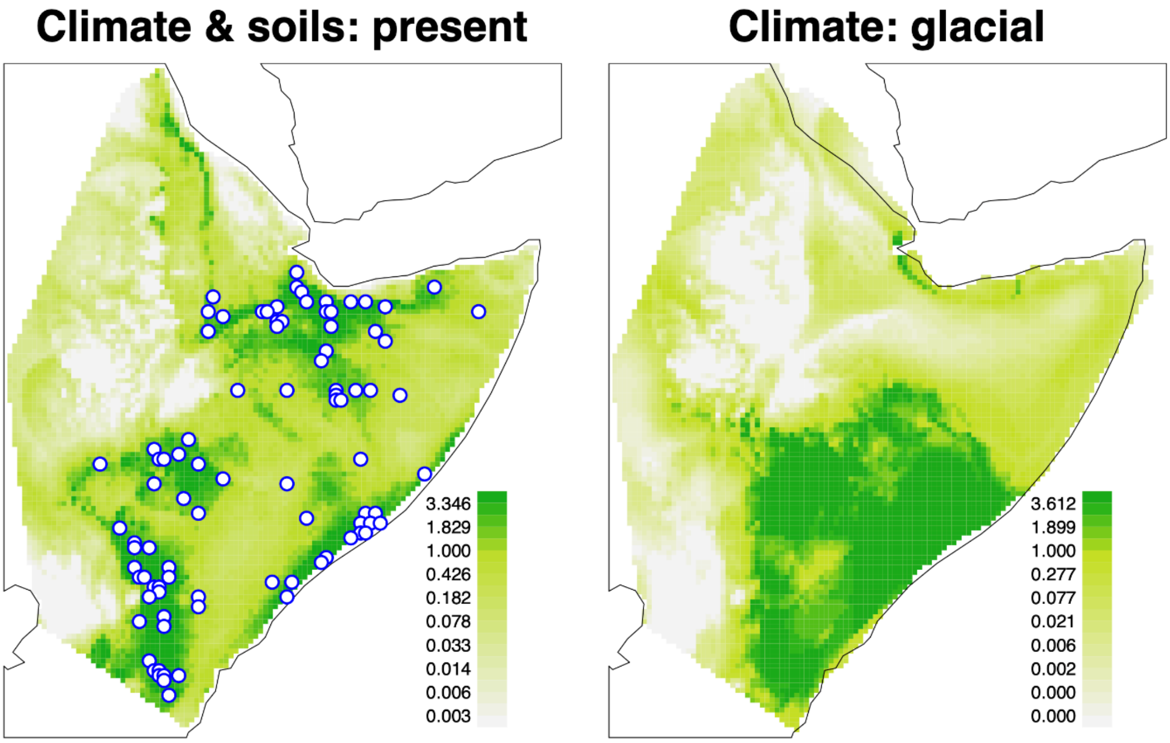

Figure S3. Predictions of the Maxent models. Cell colours indicate the predicted relative occurrence rates scaled relative to prior expectation; points mark the presence records. The predictions for the last glacial maximum are also made for the lands exposed at that time due to a decrease of sea level.

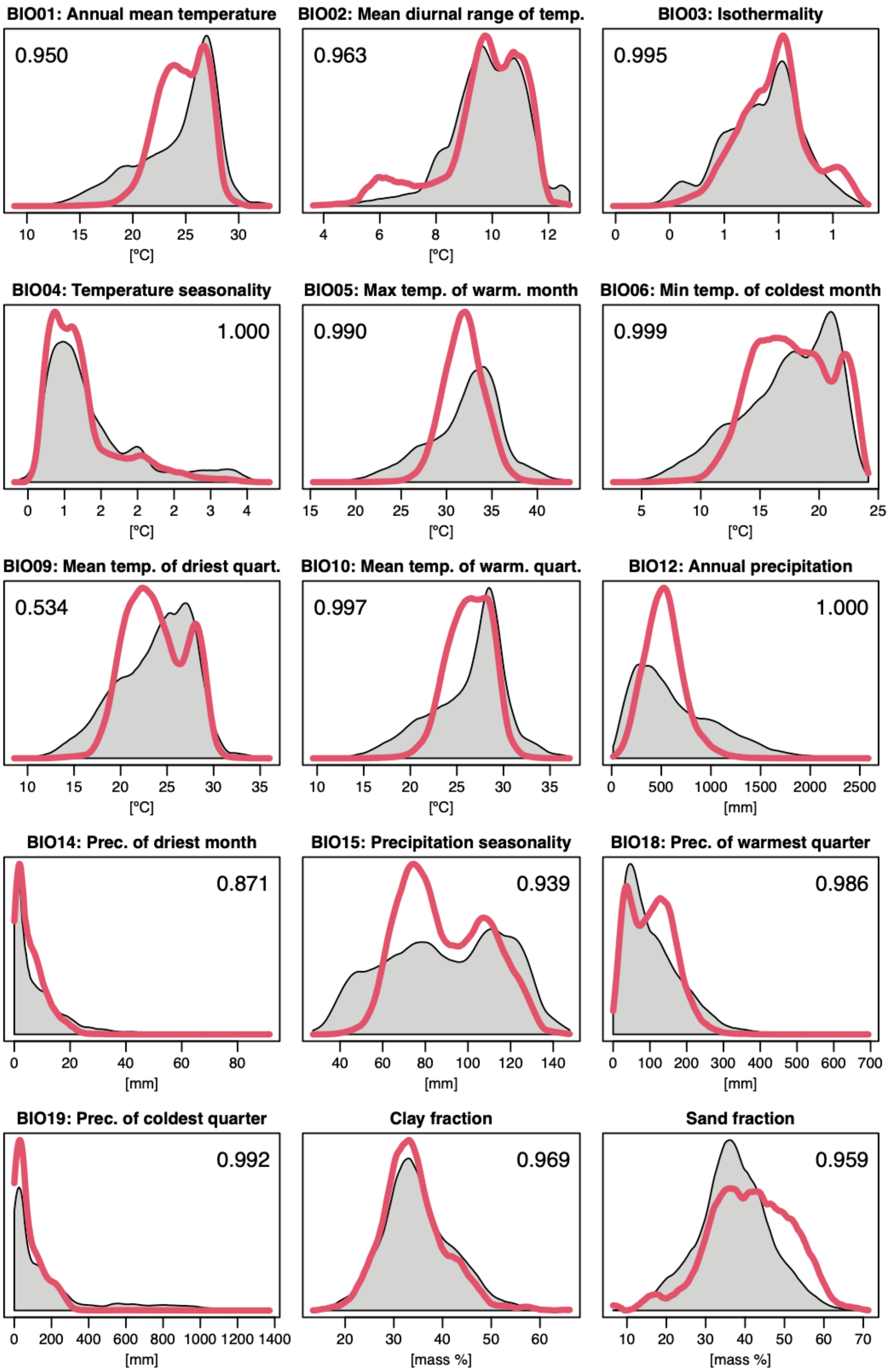

Figure S4. Ecological predictors of the Maxent model. The effect of predictors is shown by "double density plots", where the probability density distribution of all background values is shown in grey, while its ROR-weighted counterpart as a red curve. The variable importance values are indicated in the corners.

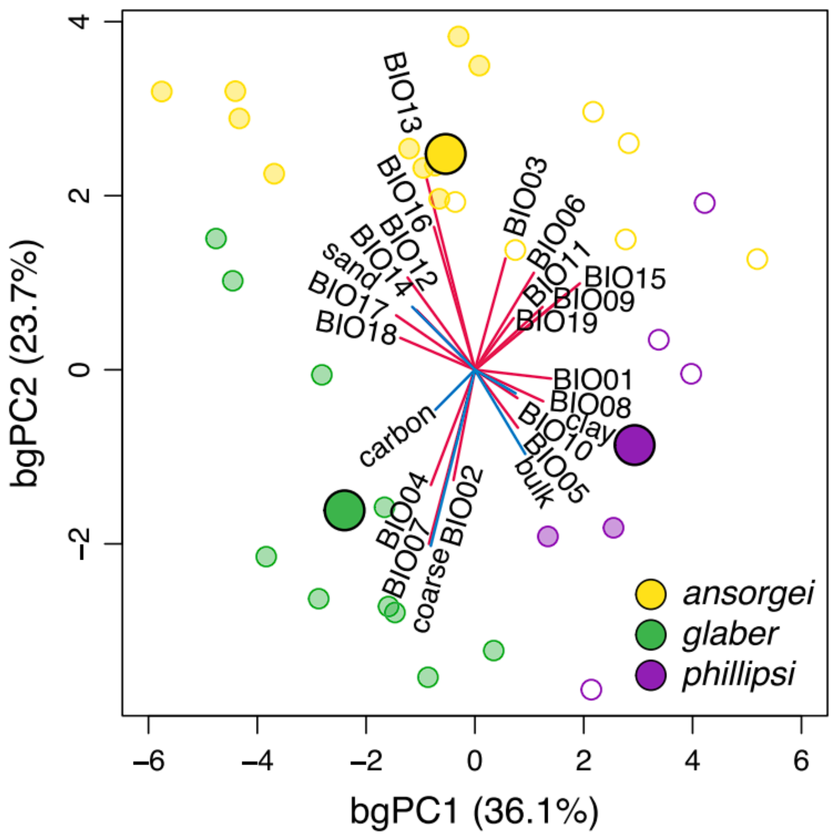

Figure S5. Between-group principal component analysis of ecological parameters used in the Maxent model. Large, filled circles are lineage means defining bgPCA axes, small open circles are locality values projected onto the axes. The circles representing genotyped specimens are filled with semi-transparent colour. The axis labels show proportions of total variability explained. The length of lines is proportional to the loadings of climatic (red) and soil (blue) variables. The complete description of climatic and soil variables is in Table S9.

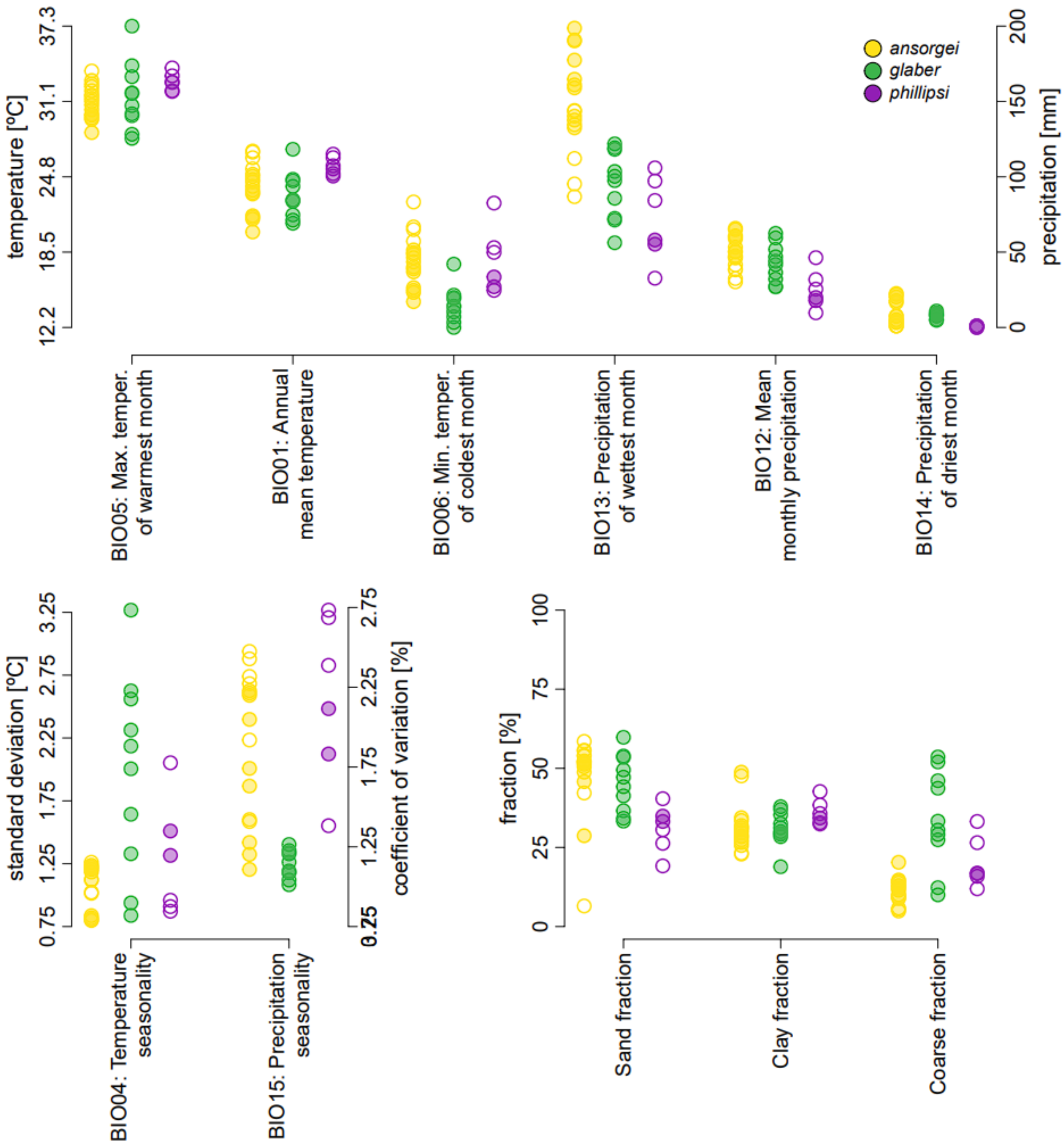

Figure S6. Variation in selected climatic and soil parameters within the lineages and between them. The circles representing genotyped specimens are filled with semi-transparent colour. For the purpose of visualization, the annual mean precipitation (BIO12) was converted to mean monthly precipitation.

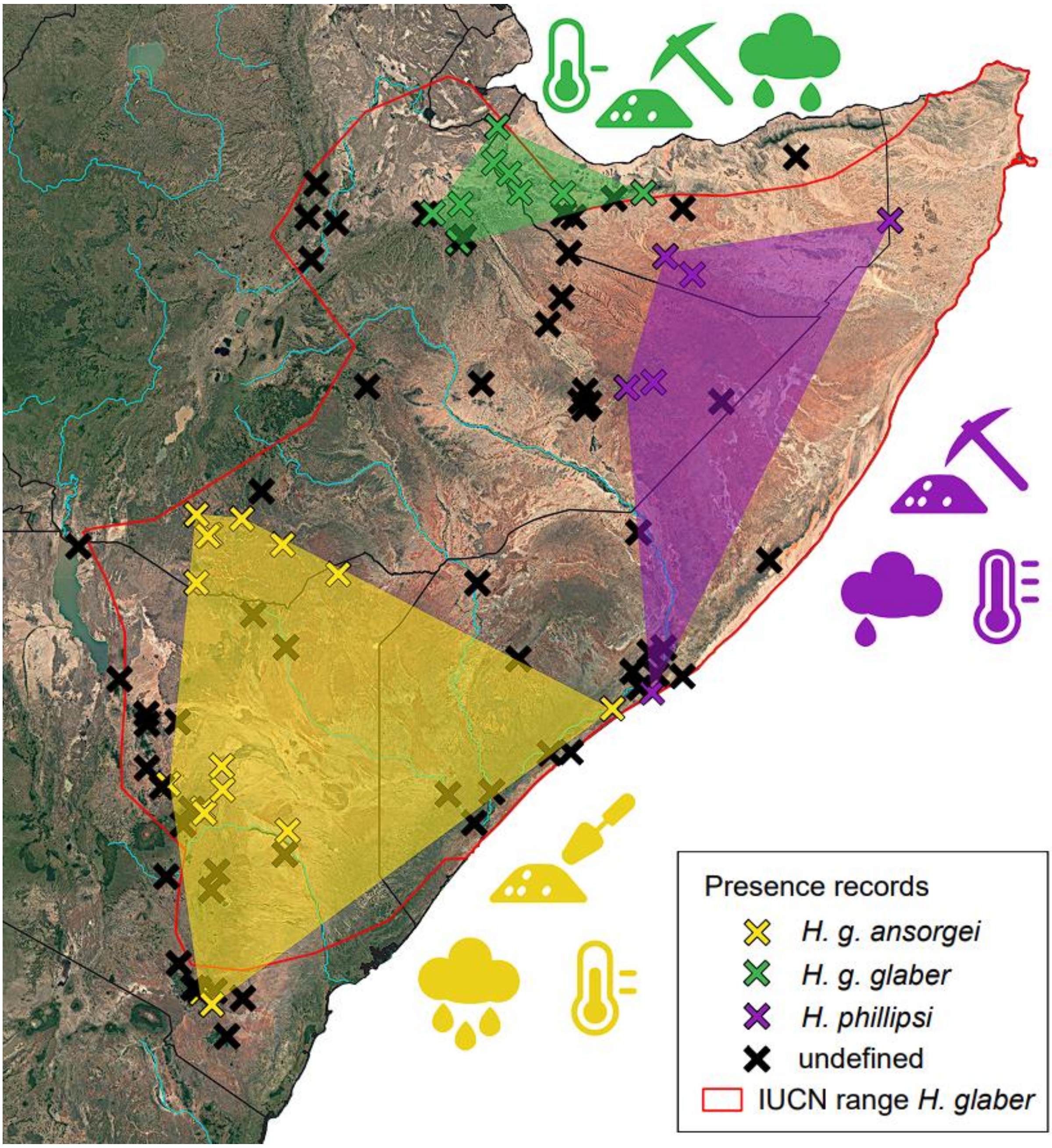

Figure S7. Distribution and ecological differentiation of the three naked mole-rat lineages. The polygons show distributions as assessed from genetic and morphological data, the symbols indicate differences in soil workability, minimum temperatures and precipitation characteristics of their habitats.

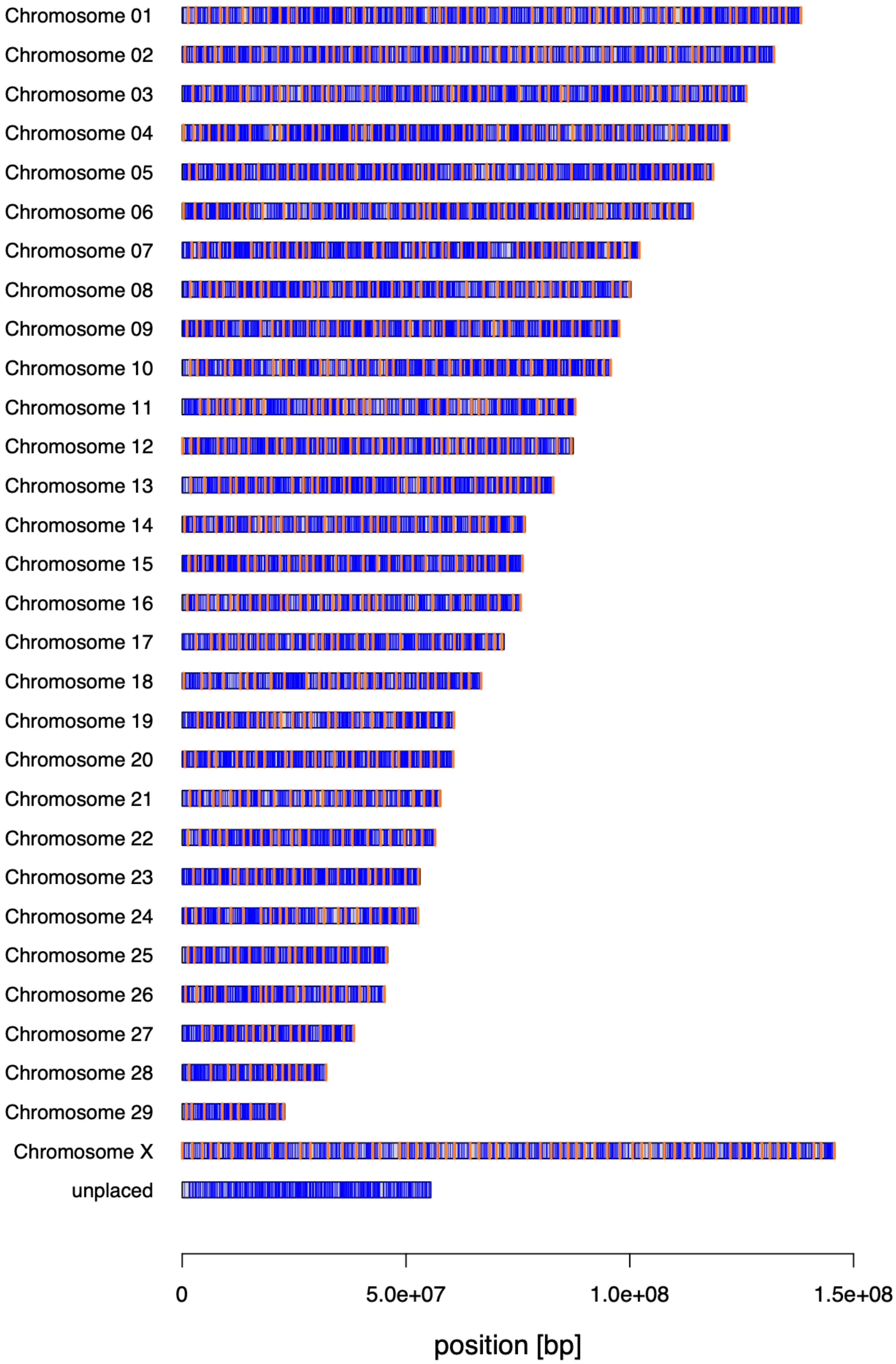

Figure S8. Genomic positions of ddRAD loci. Each rectangle represents a chromosome. The densely spaced blue lines indicate positions of all 25,466 ddRAD loci with at least 90% occupancy. The thicker orange lines interspersed among them indicate positions of 1,000 loci entering analyses in BPP.

Supplementary Tables

Table S1. Individuals used in genetic analyses and information about the locality of origin.

ID	Genus	Species	Locality	Latitude	Longitude	CYTB dataset	ddRAD dataset	Divergence dating
ETH1080	*Heterocephalus*	*ansorgei*	Geralle NP	4.4089	39.4658	yes	yes	
ETH1081	*Heterocephalus*	*ansorgei*	Geralle NP	4.4089	39.4658	yes	yes	yes
Kenya4962	*Heterocephalus*	*ansorgei*	Meru NP	0.1634	38.2122	yes	yes	
Kenya6164	*Heterocephalus*	*ansorgei*	Meru NP	0.1557	38.2243	yes	yes	
Kenya9120	*Heterocephalus*	*ansorgei*	Meru NP	0.1740	38.2112	yes	yes	
JJ072	*Heterocephalus*	*ansorgei*	Mtito Andei	-2.6926	38.1668	yes	yes	
JJ079	*Heterocephalus*	*ansorgei*	Mtito Andei	-2.6926	38.1668	yes	yes	
JJ081	*Heterocephalus*	*ansorgei*	Mtito Andei	-2.6926	38.1668	yes	yes	
SOM344	*Heterocephalus*	*glaber*	Habas	10.4113	42.8152	yes	yes	
SOM345	*Heterocephalus*	*glaber*	Habas	10.4113	42.8152	yes	yes	
SOM369	*Heterocephalus*	*glaber*	Xeego	10.2404	43.0515	yes	yes	yes
SOM406	*Heterocephalus*	*glaber*	Agabar	9.9330	43.9048	yes	yes	
SOM416	*Heterocephalus*	*glaber*	Boorama Amound University	9.9469	43.2231	yes	yes	
SOM512	*Heterocephalus*	*phillipsi*	Shanshacade	8.6604	45.9569	yes	yes	
SOM558	*Heterocephalus*	*phillipsi*	Xangay	8.9474	45.5263	yes	yes	yes
SOM584	*Heterocephalus*	*glaber*	Sheikh	9.9413	45.1813	yes	yes	
SOM585	*Heterocephalus*	*glaber*	Sheikh	9.9413	45.1813	yes	yes	
Djibouti133	*Heterocephalus*	*glaber*	Assamo	10.9735	42.8756		yes	
Djibouti131	*Heterocephalus*	*glaber*	Kashbash	10.9837	42.8576	yes	yes	
Djibouti082	*Heterocephalus*	*glaber*	Kashbash	10.9837	42.8576		yes	
LAV2953	*Heterocephalus*	*ansorgei*	Borena National Park	4.5660	38.3150	yes	yes	
LAV2984	*Heterocephalus*	*ansorgei*	Borena National Park	4.5480	38.2770	yes	yes	
LAV3036	*Heterocephalus*	*ansorgei*	Borena National Park	4.5320	38.2780	yes	yes	
LAV3119	*Heterocephalus*	*ansorgei*	Arero Forest	4.8190	38.8190	yes	yes	
LAV3120	*Heterocephalus*	*ansorgei*	Arero Forest	4.8200	38.8180	yes	yes	
LAV3123	*Heterocephalus*	*ansorgei*	Arero Forest	4.8150	38.8170	yes	yes	
LAV3193	*Heterocephalus*	*ansorgei*	Borena NP-Megady block	3.8040	38.0990	yes	yes	
LAV3207	*Heterocephalus*	*ansorgei*	Borena NP-Megady block	3.7810	38.0670	yes	yes	
LAV3214	*Heterocephalus*	*ansorgei*	Borena NP-Megady block	3.7820	38.0680	yes	yes	
LAV3411	*Heterocephalus*	*glaber*	Jeldessa	9.7620	42.2820	yes	yes	
LAV3452	*Heterocephalus*	*glaber*	Jeldessa	9.7380	42.2580	yes	yes	
LAV3455	*Heterocephalus*	*glaber*	Jeldessa	9.7380	42.2580	yes	yes	
LAV3430	*Heterocephalus*	*glaber*	Dire Dawa University campus	9.6210	41.8410	yes	yes	
LAV3434	*Heterocephalus*	*glaber*	Dire Dawa University campus	9.6210	41.8380	yes	yes	
LAV3508	*Heterocephalus*	*glaber*	Babile Elephant Sanctuary, Erer Medical Center	9.1780	42.2480	yes	yes	

LAV3521	*Heterocephalus*	*glaber*	Babile Elephant Sanctuary, Erer Medical Center	9.1700	42.2590	yes	yes	
LAV3527	*Heterocephalus*	*glaber*	Babile Elephant Sanctuary, Erer Medical Center	9.1710	42.2610	yes	yes	
ZMMU-S-111344	*Heterocephalus*	*ansorgei*	Luuq	3.8084	42.5447	yes		
U87521	*Heterocephalus*	*ansorgei*	Dembalawachu	4.8830	38.1000	yes		
U87522	*Heterocephalus*	*ansorgei*	Lerata	0.6170	37.6500	yes		
U87523	*Heterocephalus*	*ansorgei*	Lerata	0.6170	37.6500	yes		
U87524	*Heterocephalus*	*ansorgei*	Lerata	0.6170	37.6500	yes		
RSA0004	*Bathyergus*	*suillus*-East	Albertinia	-34.1968	21.4737			yes
RSA0021	*Bathyergus*	*suillus*-janetta	Kamierskroon	-30.2154	17.9535			yes
RSA0017	*Bathyergus*	*suillus*-South	Struisbaai	-34.7603	20.0420			yes
BS6	*Bathyergus*	*suillus*-West	Darling	-33.3800	18.3800			yes
CHH6	*Cryptomys*	*hottentotus*	Darling	-33.3770	18.3773			yes
RSA0010	*Cryptomys*	*mahali*	Struisbaai	-34.7188	19.94231			yes
CHNR5	*Cryptomys*	*natalensis*	Wakkerstroom	-27.2982	30.2694			yes
QMUL175	*Cryptomys*	*nimrodi*	Bulawayo	-20.1500	28.6333			yes
CHP10	*Cryptomys*	*pretoriae*	Tygerpoort	-25.796	28.3547			yes
ANG0196	*Fukomys*	*bocagei*	Tundavala	-14.8182	13.4123			yes
VM156	*Fukomys*	*damarensis*	Kalabo	-14.9976	22.6402			yes
F01.2	*Fukomys*	*foxi*	Panyam	9.410441	9.21362			yes
M8x298	*Fukomys*	sp. "Vyphia"	Viphya Plateau	-11.8779	33.79172			yes
Z7x08	*Fukomys*	*mechowii*	Kapiri Mposhi	-13.9729	28.6699			yes
JS014	*Fukomys*	*micklemi*	Lusaka East FR	-15.4574	28.4243			yes
RS0840	*Fukomys*	*whytei*	Chilonga	-12.0253	31.3399			yes
Nrd3	*Georychus*	*capensis*-KwaZuluNatal	Nottingham Road	-29.4797	29.8633			yes
Wks1	*Georychus*	*capensis*-Mpumalanga	Wakkerstroom	-27.2981	30.26262			yes
CA2	*Georychus*	*capensis*-Cape	Cape Town	-34.002	18.48267			yes
CS5	*Georychus*	*capensis*-Struisbaai	Struisbaai	-34.6862	19.99897			yes
CG14	*Georychus*	*capensis*-Oudshoorn	Oudshoorn	-33.8493	22.03795			yes
T8x404	*Heliophobius*	*argenteocinereus*-East	Msanga	-10.9025	39.2073			yes
M8x3085	*Heliophobius*	*argenteocinereus*-West	Mpalanganga estate	-15.4468	35.2607			yes
T8x459	*Heliophobius*	*kapiti*	Nayala	-8.9384	33.1825			yes
GCA004026965	*Petromus*	*typicus*						yes
MOZ132	*Thryonomys*	*gregorianus*	Mt Mabu	-16.367	36.4134			yes
GCA004025085	*Thryonomys*	*swinderianus*						yes

Table S2. Average K2P distances of *CYTB* sequences, calculated between and within the naked male-rat lineages and expressed as % of divergence.

	phillipsi	*glaber*	*ansorgei*
phillipsi	2.1	14.5	14.1
glaber	14.5	1.4	11.2
ansorgei	14.1	11.2	3.0

Table S3. Posterior means of migration rate (*M*) and their 95% highest posterior density (HPD) intervals estimated in various models, together with support for their non-zero value (Bayes Factor approximated by Savage-Dickey ratio).

Model	*M*	95% HPD	BF
glaber -> phillipsi	0.0063	0.0024-0.0103	25.82
phillipsi -> glaber	0.0002	0.0000-0.0006	0.01
ansorgei -> phillipsi	0.0046	0.0013-0.0083	2.35
phillipsi -> ansorgei	0.0002	0.0000-0.0005	0.01
ansorgei -> glaber	0.0003	0.0000-0.0008	0.01
glaber -> ansorgei	0.0003	0.0000-0.0008	0.01

Table S4. The values of fixation index (ϕ_{ST}) estimated as variance components explained by the hierarchical levels in rows relative to those in columns.

	total (whole genus)	basal	lineage
basal (*phillipsi* vs. *glaber*+*ansorgei*)	0.1361		
lineage (*phillipsi*, *glaber*, *ansorgei*)	0.9888	0.9870	
sub-lineage (*glaber* and *ansorgei* each split in two)	0.9981	0.9978	0.8273

Table S5. Absolute divergence of the lineages (d_{xy}, below the diagonal, in bold), the net divergence (d_a, above the diagonal) and nucleotide diversity (π, in the additional column).

	d_{xy} / d_a								π
	glaber + *ansorgei*	*phillipsi*	*glaber*	*ansorgei*	*ansorgei* South	*ansorgei* North	*glaber* South	*glaber* North	
glaber + *ansorgei*	-	0.0124							0.0031
phillipsi	**0.0141**	-	0.0137	0.0137					0.0003
glaber		**0.0141**	-	0.0051					0.0004
ansorgei		**0.0142**	**0.0056**	-					0.0006
ansorgei South					-	0.0006			0.0005
ansorgei North					**0.0009**	-			0.0002
glaber South							-	0.0003	0.0003
glaber North							**0.0006**	-	0.0002

Table S6. Fossils used in the divergence dating analysis. References to studies describing the fossils and classifying them to particular taxa are given in the last two columns, respectively.

Clade	Genus	Species	Age (Ma)	Age range (Ma)	Locality	Ref. (descr.)	Ref. (classif.)
Bathyergidae	*Bathyergoides*	*neotertiarius*	20.0	19-21	N Sperrgebeit: Elisabethfeld, Grillental, Fiskus, Langental	(3, 4)	(5)
Bathyergidae	*Geofossor*	*corvinusae*	17.3	17.5-17	Arrisdrift, Namibia	(6)	(5)
Bathyergidae	*Geofossor*	*moralesi*	20.0	19-21	Elisabethfeld	(4)	(5)
Bathyergidae	*Gypsorhychus*	*minor*	2.5	2.4-2.6	Taung	(7)	(5)
Bathyergidae	*Gypsorhychus*	*darti*	2.7	2.6-2.8	Taung	(8)	(5)
Bathyergidae	*Gypsorhychus*	*makapani*	2.8	2.6-3.0	limeworks Makapansgat	(7)	(5)
Bathyergidae	*Proheliophobius*	*leakeyi*	20.0		Rusinga Island, Kenya	(9)	(5)
Bathyergidae	*Richardus*	*excavans*	13.7	13.4-14.0	Fort Ternan, Kenya	(10, 11)	(5)
Bathyergus	*Bathyergus*	*hendeyi*	5.0		Langebaanweg	(12)	(5)
Cryptomys-Fukomys	*Cryptomys*	*broomi*	5.0		Langebaanweg	(12)	(5)
Heterocephalinae	*Microfossor*	*biradiculatus*	20.0	19-21	Elisabethfeld	(4)	(4)
Heterocephalus	*Heterocephalus*	*jaegeri*	1.8	1.75-1.9	Olduvai Bed I, Tanzania	(13)	(14)
Heterocephalus	*Heterocephalus*	*atikoi*	2.2	2.0-2.3	Omo Shungura F, G, Ethiopia	(15)	(14)
Heterocephalus	*Heterocephalus*	*quenstedti*	3.7	3.6–3.85	Laetoli, Upper Laetolil Beds	(14, 16)	(14)
Heterocephalus	*Heterocephalus*	*manthii*	4.3		Kakesio, Lower Laetolil Beds, Tanzania	(14)	(14)
Petromuridae	*Apodecter*	*shipmani*	13.7	13.4-14.0	Fort Ternan, Kenya	(11)	(17)
Petromuridae	*Apodecter*	*orangeus*	17.3	17.5-17	Arrisdrift, Namibia	(6)	(18)
Petromuridae	*Apodecter*	*stromeri*	20.0	19-21	Elisabethfeld, Bohrloch Betrieb IV, Grillental, Langental, E-Bay (=Lüderitz Bay)	(4, 19)	(20)
Petromuridae	*Apodecter*	*Waypoint160*	4.3	4.0-4.5	Waypoint 160 (Bolt's Farm)	(21)	(18)
Petromuridae	*Apodecter*	*aequatorials*	5.9		Kapsomin, Lukeino Formation, Kenya	(18)	(18)
Petromuridae	*Apodecter*	*australis*	8.5	8.5-10	Harasib 3a, Namibia	(22)	(20)
Petromuridae	*Apodecter*	*roessneri*	8.5	8.5-10	Harasib 3a, Namibia	(22, 23)	(20)
Petromus	*Petromus*	*minor*	2.6		Taung	(24)	(5)

Petromus	*Petromus*	*antiquus*	4.3	4.0-4.5	Waypoint 160 (Bolt's Farm)	(25)	(20)
Phyiomyid	*Epiphiomys*	*coryndioni*	19.5	early Miocene	Koru Fauna Locality 29	(9)	(17)
Phyiomyid	*Kochalia*	*geespei*	15.0		middle part of the Lower Manchar Formation, Pakistan	(26)	(17)
Phyiomyid	*Neosciuromys*	*africanus*	20.0	19-21	Elisabethfeld, Bohrloch Betrieb IV, Grillental, Fiskus, Glastal	(4, 27)	(20)
Phyiomyid	*Neosciuromys*	*fractus*	20.0	19-21	Elisabethfeld, Grillental, Fiskus, Glastal	(4, 19)	(20)
Phyiomyid	*Paraphiomys*	*occidentalis*	11.9	11.2-12.5	Beni Mellal + Azdal, Morocco	(28)	(17)
Phyiomyid	*Paraphiomys*	*knolli*	16.0	15-17	As-Sarrar, Saudi Arabia	(17)	(17)
Phyiomyid	*Paraphiomys*	*pigotti*	17.7	early Miocene	Bed 24, Kachuku, Karungu area, Kenya	(9)	(20)
Phyiomyid	*Paraphiomys*	*hopwoodi*	19.0	early Miocene	Songhor, Kenya	(9)	(17)
Phyiomyid	*Paraphiomys*	*renelavocati*	19.0	early Miocene	Rusinga, Kenya	(9, 29)	(17)
Phyiomyid	*Paraphiomys*	*afarensis*	8.5	8.5-10	Ch'orora	(30, 31)	(17)
Thryonomyidae	*Paraulacodus*	*indicus*	12.7	12.5-12.9	Siwalik ‘series’ in Pakistan	(32, 33)	(20)
Thryonomyidae	*Paraulacodus*	*Lukeino*	6.0		Kapcheberek + Aragai, Lukeino Formation, Kenya	(18)	(18)
Thryonomyidae	*Paraulacodus*	*johanesi*	8.5	8.5-10	Ch'orora	(34)	(20)
Thryonomyidae	*Protohummus*	*dango*	7.0	6.0-8.0	Baynunah Fm, United Arab Emirates	(35)	(20)
Thryonomys	*Thryonomys*	*wesselmani*	2.7		Upper Ndolanya Beds	(14)	(14)
Thryonomys	*Thryonomys*	*Tabarin*	4.5		Tabarin, Chemeron Fm, Tugen Hills, Kenya	(36)	(18)
Thryonomys	*Thryonomys*	*UpperNawata*	5.2		Upper Nawata, Kenya	(37)	(18)
Thryonomys	*Thryonomys*	*asakomae*	5.7	5.6-5.7	Middle Awash, Adu-Asa Formation, Ethiopia	(38)	(5)

Table S7. Dental measurements of *Heterocephalus*, based on our data and (25). Lineage labels based on genetic data are in bold, while those in regular style are based on dental measurements and the region of origin. The abbreviations are: GPS – latitude and longitude, GSL – greatest skull length, UMR and LMR – upper and lower molar row length, M^1L – length of the first upper molar, M_2W – width of the second lower molar and similarly for the other molar dimensions.

ID	Lineage	Locality	Sex	GPS	GSL	UMR, LMR	M1-3L, M1-3W, M1-3L, M1-3W
NHMUK-1951.702	*ansorgei*	Kenya	NA		25.60	3.50, 3.74	1.45,1.20,0.95,1.55,1.55,1.40,1.30,1.30,1.40,1.25,1.35,1.50
NHMUK-1974.169	*ansorgei*	Kenya, Kipsing R.	NA		21.40	3.54, 4.12	1.40,1.15,1.10,1.35,1.50,1.20,1.35,1.45,1.50,1.35,1.35,1.20
NHMUK-1974.170	*ansorgei*	Kenya, Kipsing R.	NA		23.20	3.40, 3.64	1.20,1.25,0.95,1.35,1.50,1.35,1.30,1.25,1.50,1.20,1.20,1.35
NHMUK-1974.173	*ansorgei*	Kenya, Kipsing R.	NA		23.10	3.50, 3.94	1.15,1.20,0.95,1.70,1.58,1.20,1.25,1.25,1.50,1.15,1.40,1.45
NHMUK-1911.12.1.122	*ansorgei*	Kenya, Ngama Nyango	NA		24.20	3.70, 3.64	1.25,1.25,1.25,1.35,1.30,1.25,1.30,1.35,1.35,1.05,1.30,1.50
NHMUK-1915.10.12.1	*ansorgei*	Kenya, Juba R.	NA		22.30	3.44, 3.58	1.30,1.15,1.05,1.45,1.40,1.20,1.30,1.40,1.50,1.10,1.30,1.30
NHMUK-1915.10.12.2	*ansorgei*	Kenya, Juba R.	NA		19.90	3.44, 3.64	1.30,1.35,1.00,1.50,1.30,1.15,1.50,1.45,1.25,1.25,1.45,1.05
MNHN-ZM-MO-1884-1578	*glaber*	Djibouti	NA		26.00	3.85, 3.65	1.50,1.30,1.20,1.50,1.70,1.45,1.10,1.20,1.45,1.10,1.40,1.65
MNHN-ZM-MO-1911-572	*glaber*	Ethiopia, Harrar	NA	9.3120, 42.1206	26.79	3.73, 3.73	1.20,1.15,1.20,1.25,1.40,1.30,1.10,1.20,1.60,1.10,1.35,1.35
NHMUK-1903.12.3.1	*phillipsi*	Somalia, Mogadishu	NA	2.0647, 45.3192	18.70	2.40, 2.70	1.10,1.15, NA,1.10,0.90, NA,1.25,1.50, NA,0.90,1.25, NA
NHMUK-1904.5.9.22	*glaber*	Somaliland, Hargeisa	NA		25.30	3.68, 3.76	1.40,1.25,1.25,1.50,1.90,1.75,1.35,1.25,1.60,1.05,1.60,1.70
NHMUK-1904.5.9.23	*phillipsi*	Ethiopia, Wardairi	NA	6.9700, 45.3400	26.00	2.90, 3.95	1.08,1.10,0.40,1.40,1.30,0.70,1.25,1.50,1.20,1.00,1.30,1.05
NHMUK-1906.3.4.10	*glaber*	Somalia, Sheikh	NA		24.80	3.84, 4.00	1.45,1.30,1.25,1.50,1.75,1.30,1.50,1.40,1.30,1.25,1.45,1.50
NHMUK-1885.12.10.1	*phillipsi*	Ethiopia, Gerlogobie	NA	6.8833, 44.9167	19.40	2.60, 3.10	1.35,1.25, NA,1.25,1.30, NA,1.50,1.60, NA,1.10,1.05, NA
NHMUK-1909.6.1.28	*ansorgei*	Kenya, Banissa, Boran	NA	3.9420, 40.3452	24.80	3.32, 3.62	1.25,1.15,1.00,1.48,1.60,1.35,1.10,1.35,1.50,1.05,1.50,1.45
NHMUK-1898.9.25.3	*ansorgei*	Kenya, Ngomeni - Kinani	NA	-2.8800, 38.3450	26.00	3.20, 3.30	1.18,1.20,1.05,1.25,1.35,1.25,1.20,1.25,1.55,0.95,1.10,1.10
NHMUK-99.5.31.1	*glaber*	Somaliland, Golis Mts	NA		25.00	3.80, 4.16	1.40,1.40,1.10,1.95,1.80,1.15,1.35,1.35,1.40,1.05,1.30,1.40
ETH1080	***ansorgei***	Ethiopia, Geralle NP	F	4.4089, 39.4658	20.94	3.00, 3.27	1.01,1.18,0.95,1.21,1.35,1.11,1.14,1.07,1.05,1.07,1.29,1.31
ETH1081	***ansorgei***	Ethiopia, Geralle NP	F	4.4089, 39.4658	23.55	3.24, 3.33	1.22,1.18,0.92,1.34,1.47,1.20,1.17,1.17,1.05,1.10,1.33,1.26
MNHN-ZM-MO-1978-268	*ansorgei*	Somalia, Afmadu	NA	0.4500, 42.0833	24.97	3.34, 3.71	1.35,1.30,1.20,1.65,1.95,1.55,1.05,1.10,1.50,1.25,1.53,1.55

SOM344	***glaber***	Somaliland, Habas	NA	10.4113, 42.8152	21.05	3.37, 3.77	1.14,1.21,0.96,1.33,1.53,1.15,1.16,1.32,1.27,1.17,1.43,1.39
SOM345	***glaber***	Somaliland, Habas	NA	10.4113, 42.8152	26.72	3.64, 3.98	1.16,1.17,1.12,1.58,1.59,1.30,1.10,1.28,1.47,1.20,1.40,1.50
SOM369	***glaber***	Somaliland, Xeego	F	10.2404, 43.0515	24.65	3.56, 3.99	1.17,1.29,0.97,1.44,1.59,1.12,1.27,1.41,1.29,1.26,1.47,1.29
SOM406	***glaber***	Somaliland, Agabar	F	9.9330, 43.9048	26.03	3.30, 3.51	1.17,1.15,0.92,1.27,1.43,1.09,0.97,1.09,1.26,1.10,1.37,1.38
SOM512	***phillipsi***	Somaliland, Shanshacade	M	8.6604, 45.9569	20.01	2.04, 2.19	1.04,1.02,0.69,1.13,1.23,0.72,1.02,1.22,0.80,0.85,1.06,0.68
SOM558	***phillipsi***	Somaliland, Xangay	F	8.9474, 45.5263	19.61	2.71, 2.95	1.05,1.05,0.65,1.24,1.16,0.78,1.20,1.14,0.82,0.94,1.15,0.89
SOM584	***glaber***	Somaliland, Sheikh	F	9.9413, 45.1813	26.80	3.37, 3.65	1.20,1.21,1.02,1.30,1.61,1.11,1.10,1.20,1.27,1.18,1.40,1.35
SOM585	***glaber***	Somaliland, Sheikh	M	9.9413, 45.1813	24.62	3.41, 3.85	1.13,1.26,1.00,1.27,1.53,1.13,1.15,1.24,1.28,1.14,1.41,1.39

Table S8. Presence records of *Heterocephalus*, based on our collections and published data. When in bold the lineage labels are based on genetic data, otherwise on dental measurements. The type series of *scorteccii* is no longer available (believed to be destroyed) and upper molar row lengths in (39) seem to be biased as they are often out of the range otherwise observed in the genus. Nevertheless, the upper molar row lengths are still markedly shorter in the types of *scorteccii*, compared to other material, which allowed us to classify it to *phillipsi*. The classification of *progrediens* types to *ansorgei* is due to (2) and consistent with its area of origin. The other types are: NHMUK-1885.12.10.1 (*phillipsi*), NHMUK-1898.9.25.3 (*ansorgei*) and NHMUK-1904.5.9.23 (*dunni*). The precise collection site of SMNS-855 (*glaber*) is not known.

ID	Lineage	Country	Site	Latit.	Longit.	Source
Capanna1980-War		Somalia	War Mahn	2.4000	45.0100	(40)
Capanna1980-Warshek		Somalia	Warshek	2.3200	45.8000	(40)
CAS-15941		Kenya	Laisumis	1.6000	37.8000	museum record
CAS-15942		Kenya	Buna	2.7833	39.5167	museum record
CUNI-ETH756		Ethiopia	Kebri Dehar	6.5556	44.2512	unpublished record
deBeaux1934-Abruzzi		Somalia	Villagio Duca degli Abruzzi (Jowhaar)	2.7775	45.5018	(39)
deBeaux1934-Afgoi		Somalia	Afgoi (Afgoye)	2.1431	45.1176	(39)
deBeaux1934-Belet		Somalia	Belet Amin	2.7000	45.2833	(39)
deBeaux1934-Brava		Somalia	Brava (Baraawe)	1.1165	44.0314	(39)
deBeaux1934-Gelib		Somalia	Gelib (Jilib)	0.4921	42.7783	(39)
deBeaux1934-Guban		Ethiopia	Guban-Gubu	6.9448	42.6117	(39)
Djibouti131	***glaber***	Djibouti	Kashbash	10.9837	42.8576	this study
ETH1080	***ansorgei***	Ethiopia	Geralle NP	4.4089	39.4658	this study
Faulkes1997-Rungno		Somalia	Rungno waterhole	4.1618	47.1719	(41)
FMNH-220950	***ansorgei***	Kenya	Meru NP, Leopard Rock Lodge	0.2226	38.2009	museum record
FMNH-8184		Somalia	Jerato Pass, Golis Mts	9.8500	44.7167	museum record
FMNH-8185		Somalia	Hullier	9.6126	43.9191	museum record
iNaturalist-105983370		Kenya	Meru NP	0.2157	38.0203	(42)
iNaturalist-106962057		Ethiopia	East Hararghe	9.6111	41.7222	(42)
iNaturalist-161089922		Kenya	Ngurunit	1.7299	37.3079	(42)
iNaturalist-246726321		Ethiopia	Zone 3 Gabi Rasu	9.4734	40.3101	(42)
iNaturalist-31518		Kenya	West Gate Com. Cons.	0.8699	37.3148	(42)
iNaturalist-38385931		Somaliland	Hargeisa	9.5624	44.0770	(42)
iNaturalist-6870593		Ethiopia	North Shewa	9.5561	39.8605	(42)
Jarvis2002-02		Kenya		3.3000	39.0000	(43)
Jarvis2002-03		Kenya		-0.5000	39.5000	(44)
Jarvis2002-05		Somalia		0.0000	42.5000	(43)
Jarvis2002-06		Somalia		2.6000	43.2000	(43)
Jarvis2002-07		Somalia		1.1000	43.7000	(43)
Jarvis2002-08		Somalia		9.0000	44.0000	(43)
Jarvis2002-09		Somalia		4.6000	45.1000	(43)

Jarvis2002-10		Somaliland		9.7000	45.8000	(43)
Jarvis2002-11		Somaliland		10.5000	47.6000	(43)
JJ072	***ansorgei***	Kenya	Mtito Andei	-2.6926	38.1678	this study
Kenya4962	***ansorgei***	Kenya	Meru NP	0.1557	38.2243	this study
LACM-39679		Kenya	Il Gerai; Milgis R; Barsaloi	1.5677	37.3167	museum record
LAV1704	***glaber***	Ethiopia	Babile Eleph. Sanctuary	9.1520	42.2570	(45)
LAV2953	***ansorgei***	Ethiopia	Borena NP	4.5660	38.3150	(45)
LAV2984	***ansorgei***	Ethiopia	Borena NP	4.5480	38.2770	(45)
LAV3119	***ansorgei***	Ethiopia	AreroForest	4.8190	38.8190	(45)
LAV3193	***ansorgei***	Ethiopia	Borena NP -Megadu block	3.8040	38.0990	(45)
LAV3411	***glaber***	Ethiopia	Jeldessa	9.7620	42.2820	(44)
LAV3430	***glaber***	Ethiopia	Dire Dawa	9.6210	41.8410	(46)
LAV3508	***glaber***	Ethiopia	Babile Elep.Sanctuary	9.1780	42.2480	(44)
LAV4202		Ethiopia	Kebri Dehar	6.6387	44.3208	unpublished record
LAV4209		Ethiopia	Kebri Dehar	6.6713	44.1879	unpublished record
LAV4243		Ethiopia	Kebri Dehar	6.8347	44.2561	unpublished record
MCZ-59861		Kenya	8 km N and 3 km W of Mitito Andei	-2.6167	38.0500	museum record
MCZ-59997		Kenya	6 km N and 3 km W of Mitito Andei	-2.6333	38.1333	museum record
MCZ-60047		Kenya	Mbuvu, 4 km N, 12 km E of Nguni	-0.7750	38.4250	museum record
MHNG-MAM-926.056		Kenya	Mitunguu	-0.0240	37.8870	museum record
MNHN-ZM-MO-1978-268		Somalia	Afmadu	0.4500	42.0833	museum record
MNHN-ZM-MO-1978-269	*ansorgei*	Somalia	Genale	1.8100	44.6900	museum record
MVZ-Mamm-170982		Kenya	5 km N Mtito Andai	-2.6667	38.3833	museum record
NHMUK-1885.12.10.1	*phillipsi*	Ethiopia	Gerlogobie (Gedlegube)	6.8833	44.9167	(47)
NHMUK-1898.9.25.3	*ansorgei*	Kenya	between Ngomeni and Kinani	-2.8800	38.3450	(48)
NHMUK-1903.12.3.1	*phillipsi*	Somalia	Mogadishu	2.0647	45.3192	museum record
NHMUK-1904.5.9.23	*phillipsi*	Ethiopia	Wardairi	6.9700	45.3400	(48)
NHMUK-1909.6.1.28	*ansorgei*	Kenya	Banissa, Boran	3.9420	40.3452	museum record
NHMUK-1932.2.19.9	*ansorgei*	Kenya	Garba Tula	0.5267	38.5144	museum record
NHMUK-1951.702	*ansorgei*	Kenya	Sankuri Tana R.	-0.1268	39.5438	museum record
NHMUK-1987.950		Somalia	Balcad	2.3600	45.3860	museum record
NMK-3050		Kenya	Horr Valley	2.2800	36.8800	GBIF
NMK-Tana		Kenya	Lower Tana	-0.8522	37.6219	GBIF
NMK-TsavoEast		Kenya	Tsavo East NP	-2.7817	38.8332	GBIF
ROM-73304		Kenya	Voi	-3.3833	38.5833	museum record
SOM344	***glaber***	Somaliland	Habas	10.4113	42.8152	this study
SOM369	***glaber***	Somaliland	Xeego	10.2404	43.0515	this study
SOM406	***glaber***	Somaliland	Agabar	9.9330	43.9048	this study

SOM416	***glaber***	Somaliland	Boorama Amound Univ.	9.9469	43.2231	this study
SOM512	***phillipsi***	Somaliland	Shanshacade	8.6604	45.9569	this study
SOM558	***phillipsi***	Somaliland	Xangay	8.9474	45.5263	this study
SOM584	***glaber***	Somaliland	Sheikh	9.9413	45.1813	this study
type-progrediens	*ansorgei*	Kenya	Thornbush country N of Northern Guaso Nyiro	0.9000	38.5000	(49)
type-scorteccii	*phillipsi*	Somalia	Gardo (Qardho)	9.5100	49.0900	(38)
U87521	***ansorgei***	Ethiopia	Dembalawachu	4.8830	38.1000	(50)
U87522	***ansorgei***	Kenya	Lerata	0.6170	37.6500	(50)
USNM-083925		Somalia	Luuq (Lugh)	3.8000	42.5500	museum record
USNM-484012		Kenya	Samburu Game Lodge, Ewaso Nyiro River	0.5700	37.5500	museum record
UWBM-Mamm-36466		Kenya	Nuu; Kitui	-1.0667	38.3333	museum record
Yalden1976-ArsuRiver		Ethiopia	Arsu River	10.0830	40.0000	(51)
Yalden1976-AuataRivver		Ethiopia	Auata River	5.2500	39.1300	(51)
Yalden1976-AwashNP		Ethiopia	Awash NP	8.9000	39.9170	(51)
Yalden1976-Elolo		Kenya	Elolo	4.3800	36.2300	(51)
Yalden1976-Harar		Ethiopia	Harar, 30km E	9.2500	42.3330	(51)
Yalden1976-Meghenlo		Ethiopia	Meghenlo	6.6670	46.4170	(51)
Yalden1976-Milmil		Ethiopia	Milmil	8.3000	43.8830	(51)
Yalden1976-Sassabane		Ethiopia	Sassabane	7.8830	43.6670	(51)
Yalden1976-SofOmar		Ethiopia	Sof Omar	6.9000	40.8000	(51)
Zemanova2012-Makindu		Kenya	Makindu	-2.2300	37.8200	(52)

The museum records were accessed either directly or through http://vertnet.org or https://www.gbif.org.

Table S9. Ecological variables and their means and extremes at places with recorded presences of the lineages. The variables included in the Maxent model are marked with an asterisk.

Variable			Lineage		
	Definition	Unit	*ansorgei*	*glaber*	*phillipsi*
Climate					
BIO01*	Annual mean temperature	°C	23.9 (20.2-26.9)	23.2 (20.9-27.1)	25.7 (24.8-26.7)
BIO02*	Mean diurnal range of temperatures	°C	9.4 (6.1-10.4)	11.1 (10.2-11.6)	10.3 (5.9-11.6)
BIO03*	Isothermality (BIO2/BIO7)		0.7 (0.6-0.8)	0.6 (0.5-0.7)	0.7 (0.6-0.7)
BIO04*	Temperature seasonality (st. dev.)	°C	1.1 (0.8-1.3)	2.0 (0.8-3.3)	1.3 (0.9-2.1)
BIO05*	Max temperature of warmest month	°C	31.1 (28.5-33.6)	31.5 (28.0-37.3)	32.7 (31.9-33.9)
BIO06*	Min temperature of coldest month	°C	17.9 (14.4-22.7)	14.1 (12.2-17.5)	17.9 (15.3-22.6)
BIO07	Temperature annual range	°C	13.2 (9.6-14.4)	17.4 (15.2-19.9)	14.8 (9.3-17.4)
BIO08	Mean temperature of wettest quarter	°C	24.1 (20.3-27.9)	23.7 (20.9-26.5)	26.4 (25.7-27.2)
BIO09*	Mean temperature of driest quarter	°C	23.6 (21.3-27.9)	21.1 (18.4-30.7)	24.5 (21.8-27.5)
BIO10*	Mean temperature of warmest quarter	°C	25.6 (22.2-28.6)	25.5 (21.9-31.1)	27.2 (26.7-28.0)
BIO11	Mean temperature of coldest quarter	°C	22.6 (18.8-25.5)	20.1 (18.4-22.5)	23.7 (21.8-25.2)
BIO12*	Annual precipitation	mm	589 (363-790)	515 (323-750)	302 (117-556)
BIO13	Precipitation of wettest month	mm	148 (87-199)	95 (56-122)	72 (33-106)
BIO14*	Precipitation of driest month	mm	9 (1-23)	8 (5-11)	1 (0-1)
BIO15*	Precipitation seasonality (coef. var.)	%	92 (63-114)	65 (60-69)	104 (74-124)
BIO16	Precipitation of wettest quarter	mm	362 (233-488)	251 (161-335)	193 (90-283)
BIO17	Precipitation of driest quarter	mm	28 (3-72)	28 (15-40)	3 (0-5)
BIO18*	Precipitation of warmest quarter	mm	108 (17-168)	118 (58-190)	50 (35-89)
BIO19*	Precipitation of coldest quarter	mm	72 (11-245)	32 (15-44)	78 (0-185)
Soil					
bulk	Bulk density	kg/dm3	1.4 (1.2-1.5)	1.4 (1.3-1.5)	1.5 (1.4-1.5)
carbon	Carbon content	g/kg	9.9 (3.8-18.2)	12.1 (4.8-25.8)	9.2 (8.0-11.4)
clay*	Proportion of clay particles (< 0.002 mm) in the fine fraction	mass %	31.4 (22.9-48.8)	31.0 (18.9-37.9)	36.0 (32.4-42.7)
coarse	Volumetric fraction of coarse fragments (> 2 mm)	vol. %	11.0 (4.9-20.3)	33.8 (10.0-53.6)	20.2 (11.9-33.2)
sand*	Proportion of sand particles (> 0.05 mm) in the fine fraction	mass %	47.5 (6.5-58.5)	45.4 (33.3-59.8)	30.8 (19.2-40.4)

Table S10. A list of Sanger-sequenced loci with primers and lengths of final products.

Gene	Sequences of primers (5´-3´)	Length (bp)	Reference
CYTB	L: CGAAGCTTGATATGAAAAACCATCGTTG H: AACTGCAGTCATCTCCGGTTTACAAGAC	1126	(53)
CYTB (Djibouti)	L: CCRTAAATWGGNGAAGGYTT H: CTGGTTGRCYYCCRATTCATG	1012	this study
CYTB (museum spec.)	L: CGAAGCTTGATATGAAAAACCATCGTTG H: TTGGCGTGTARGTATCGG	236	(53) this study
	L: CACYGCAGACACAGCCACCG H: GCTGAGAATAGGTTTGTGATGACTGT	245	this study
	L: CCATGAGGACAAATATCATTCTGAGGTGC H: AGTCTTTAAATGAGTAGTAGGGGTGGAATGG	195	this study
	L: CTTCGCCTTCCACTTCATCCTA H: TGCTGGTGTGTAGTTATCGGGGT	199	this study
	L: ACTAACACTATTCCACCCAGACCTACTA H: TAGTTTGTTGGGAATAGAGCGTAGG	73	this study
	L: TCCAAACAACGCAGCATAATA H: TCTCCATTTCTGGTTTACAAGAC	192	this study (54)
RAG1	L: GCTTTGATGGACATGGAAGAAGACAT H: GAGCCATCCCTCTCAATAATTTCAGG	983	(55)
DHCR	L: CAGGACATGCTGGTGCCCATGAA H: CCTGGCTGGCTGGGCAGGATGAA	301	(56)
FGB	L: GGGGAGAACAGAACCATGACCATCCAC H: ACCCCAGTAFTATCTGCCATTCGGATT	750	(57)
SMO	L: GCCACCCTGCTCATCTGGAGGCG H: TTGGCRATCATCTTGCTYTTCTTGA	395	(56)
TRPV	L: TTACCRBACCACVGYGGACTACCT H: CTGGAAGGAGCCRTCGAYGAAGA	352	(56)

Table S11. Parameters used in the ipyrad assembly of ddRAD sequence loci.

heterocephalus	## [0] [assembly_name]: Assembly name.
./	## [1] [project_dir]: Project directory.
	## [2] [raw_fastq_path]: Location of raw non-demultiplexed fastq files.
	## [3] [barcodes_path]: Location of barcodes file.
*fastq	## [4] [sorted_fastq_path]: Location of demultiplexed/sorted fastq files.
reference	## [5] [assembly_method]: Assembly method.
Heterocephalus_glaber_GCA_944319715.1_Naked_mole-rat_maternal_genomic.fna	## [6] [reference_sequence]: Location of reference sequence file.
pairddrad	## [7] [datatype]: Datatype.
CATGC, AATT	## [8] [restriction_overhang]: Restriction overhang (cut1, cut2).
5	## [9] [max_low_qual_bases]: Max low qual. base calls (Q<20) in a read.
33	## [10] [phred_Qscore_offset]: phred Q score offset (33 is very standard).
10	## [11] [mindepth_statistical]: Min depth for statistical base calling.
10	## [12] [mindepth_majrule]: Min depth for majority-rule base calling.
10000	## [13] [maxdepth]: Max cluster depth within samples.
0.85	## [14] [clust_threshold]: Clustering threshold for de novo assembly.
1	## [15] [max_barcode_mismatch]: Max no. of mismatches in barcodes.
2	## [16] [filter_adapters]: Filter for adapters/primers (1 or 2=stricter).
35	## [17] [filter_min_trim_len]: Min length of reads after adapter trim.
2	## [18] [max_alleles_consens]: Max alleles per site in consensus seq.
0.05	## [19] [max_Ns_consens]: Max N's (uncalled bases) in consensus.
0.05	## [20] [max_Hs_consens]: Max Hs (heterozygotes) in consensus.
4	## [21] [min_samples_locus]: Min # samples per locus for output.
0.2	## [22] [max_SNPs_locus]: Max # SNPs per locus.
8	## [23] [max_Indels_locus]: Max # of indels per locus.
0.5	## [24] [max_shared_Hs_locus]: Max # heterozygous sites per locus.
0, 0, 0, 0	## [25] [trim_reads]: Trim raw read edges (R1>, <R1, R2>, <R2).
0, 0, 0, 0	## [26] [trim_loci]: Trim locus edges (R1>, <R1, R2>, <R2).
*	## [27] [output_formats]: Output formats.
	## [28] [pop_assign_file]: Path to population assignment file

Table S12. Accession numbers of Sanger sequences used in this study, available in the NCBI Genbank. An asterisk (*) indicates that the sequence was obtained from a published genome assembly. The genome accession number for *Thyonomys swinderianus* is GCA_004025085.1 (https://www.ncbi.nlm.nih.gov/datasets/genome/GCA_004025085.1), and for *Petromus typicus*, it is GCA_004026965.1 (https://www.ncbi.nlm.nih.gov/datasets/genome/GCA_004026965.1).

ID	Genus	Species	*CYTB*	*RAG*	*FGB*	*DHCR*	*SMO*	*TRPV*
ETH1080	*Heterocephalus*	*ansorgei*	MK795897					
ETH1081	*Heterocephalus*	*ansorgei*	PV945842	OK506478	OK506561	OK524004	OK524084	OK524147
Kenya4962	*Heterocephalus*	*ansorgei*	PV945838					
Kenya6164	*Heterocephalus*	*ansorgei*	PV945839					
Kenya9120	*Heterocephalus*	*ansorgei*	PV945840					
JJ072	*Heterocephalus*	*ansorgei*	PV945852					
JJ079	*Heterocephalus*	*ansorgei*	PV945853					
JJ081	*Heterocephalus*	*ansorgei*	PV945854					
SOM344	*Heterocephalus*	*glaber*	PV945843					
SOM345	*Heterocephalus*	*glaber*	PV945844					
SOM369	*Heterocephalus*	*glaber*	PV945845	PV945859		PV945856	PV945861	PV945862
SOM406	*Heterocephalus*	*glaber*	PV945846					
SOM416	*Heterocephalus*	*glaber*	PV945847					
SOM512	*Heterocephalus*	*phillipsi*	PV945848					
SOM558	*Heterocephalus*	*phillipsi*	PV945849	PV945858	PV945857	PV945855	PV945860	PV945863
SOM584	*Heterocephalus*	*glaber*	PV945850					
SOM585	*Heterocephalus*	*glaber*	PV945851					
Djibouti131	*Heterocephalus*	*glaber*	PV945837					
LAV2953	*Heterocephalus*	*ansorgei*	MK795871					
LAV2984	*Heterocephalus*	*ansorgei*	MK795875					
LAV3036	*Heterocephalus*	*ansorgei*	MK795880					
LAV3119	*Heterocephalus*	*ansorgei*	MK795887					
LAV3120	*Heterocephalus*	*ansorgei*	MK795888					
LAV3123	*Heterocephalus*	*ansorgei*	MK795884					
LAV3193	*Heterocephalus*	*ansorgei*	MK795885					
LAV3207	*Heterocephalus*	*ansorgei*	MK795893					
LAV3214	*Heterocephalus*	*ansorgei*	MK795886					
LAV3411	*Heterocephalus*	*glaber*	MN296102					
LAV3452	*Heterocephalus*	*glaber*	MN296104					
LAV3455	*Heterocephalus*	*glaber*	MT845379					
LAV3430	*Heterocephalus*	*glaber*	MT845374					
LAV3434	*Heterocephalus*	*glaber*	MT845376					
LAV3508	*Heterocephalus*	*glaber*	MN296106					
LAV3521	*Heterocephalus*	*glaber*	MT845380					
LAV3527	*Heterocephalus*	*glaber*	MN296109					
ZMMU-S-111344	*Heterocephalus*	*ansorgei*	PV945836					
U87521	*Heterocephalus*	*ansorgei*	U87521					
U87522	*Heterocephalus*	*ansorgei*	U87522					
U87523	*Heterocephalus*	*ansorgei*	U87523					
U87524	*Heterocephalus*	*ansorgei*	U87524					

RSA0004	*Bathyergus*	*suillus*-East	PP975853	PP975841	PP975830	PP975875	PP975865
RSA0021	*Bathyergus*	*suillus*-janetta	PP975858	PP975844	PP975835	PP975873	PP975862
RSA0017	*Bathyergus*	*suillus*-South	PP975856	PP975842	PP975828	PP975874	PP975867
BS6	*Bathyergus*	*suillus*-West	OK506505	OK506562	OK524036	OK524109	OK524145
CHH6	*Cryptomys*	*hottentotus*	OK506516	OK506563	OK524028	OK524122	OK524146
RSA0010	*Cryptomys*	*mahali*	PX026283	PX026270	PX026280	PX026274	PX026279
CHNR5	*Cryptomys*	*natalensis*	PX026284	PX026271		PX026273	PX026276
QMUL175	*Cryptomys*	*nimrodi*	PX026285	PX026268	PX026281	PX026275	PX026278
CHP10	*Cryptomys*	*pretoriae*	PX026286	PX026269	PX026282	PX026272	PX026277
ANG0196	*Fukomys*	*bocagei*	OK506519	OK506569	OK524033	OK524127	OK524150
VM156	*Fukomys*	*damarensis*	OK506522	OK506565	OK524030	OK524124	OK524131
F01.2	*Fukomys*	*foxi*	OK506521	OK506570	OK524031	OK524123	OK524153
M8x298	*Fukomys*	sp. "Vyphia"	OK506517	OK506567	OK524034	OK524129	OK524149
Z7x08	*Fukomys*	*mechowii*	OK506520	OK506564	OK524035	OK524125	OK524151
JS014	*Fukomys*	*micklemi*	OK506523	OK506568	OK524032	OK524126	OK524148
RS0840	*Fukomys*	*whytei*	OK506518	OK506566	OK524029	OK524128	OK524152
Nrd3	*Georychus*	*capensis*-KwaZuluNatal	OK506506	OK506533		OK524108	OK524135
Wks1	*Georychus*	*capensis*-Mpumalanga	OK506502	OK506534	OK524037	OK524110	OK524132
CA2	*Georychus*	*capensis*-Cape	OK506511	OK506524	OK524043	OK524117	OK524137
CS5	*Georychus*	*capensis*-Struisbaai	OK506512	OK506530	OK524046	OK524119	OK524140
CG14	*Georychus*	*capensis*-Oudshoorn	OK506515	OK506529	OK524042	OK524116	OK524138
T8x404	*Heliophobius*	*argenteocinereus*-East	OK506488	OK506550	OK524020	OK524086	OK524168
M8x3085	*Heliophobius*	*argenteocinereus*-West	OK506499	OK506541	OK524010	OK524098	OK524162
T8x459	*Heliophobius*	*kapiti*	OK506481	OK506555	OK524026	OK524105	OK524158
GCA004026965	*Petromus*	*typicus*	JN414974	MH186565	*		
MOZ132	*Thryonomys*	*gregorianus*	OK506477	OK506560	OK524003	OK524083	OK524130
GCA004025085	*Thryonomys*	*swinderianus*	*	*	*	*	

Supplementary Videos

Available at a figshare repository: https://doi.org/10.6084/m9.figshare.27952233

Video S1 (separate file). Visualization of skull and molar morphology of *H. phillipsi* (SOM512). The complete absence of M^3 on the right side and a very small partly erupted M^3 (red) on the left side are visible. M^1 (blue) and M^2 (green) are fully developed. All lower molars are present, nevertheless both M_3 are again very small and partly hidden in the mandible.

Video S2 (separate file). Visualization of skull and molar morphology of *H. phillipsi* (SOM558). All upper and lower molars are present. M^1 and M_1 (blue) and M^2 and M_2 (green) are fully developed. M^3 and M_3 (red) are again very small but not as hidden in the mandible as in *H. phillipsi* SOM512.

Video S3 (separate file). Visualization of skull and molar morphology of *H. g. glaber* (SOM585). All upper and lower molars are present and well developed. M^1 and M_1 in blue, M^2 and M_2 in green, and M^3 and M_3 in red.

Video S4 (separate file). Visualization of skull and molar morphology of *H. g. ansorgei* (ETH1081). All upper and lower molars are present and well developed. M^1 and M_1 in blue, M^2 and M_2 in green, and M^3 and M_3 in red.

Supplementary Datasets

Available at a figshare repository: https://doi.org/10.6084/m9.figshare.27952362

Dataset S1 (separate file). Partitioned nexus file with alignments of ddRAD sequence loci.

Dataset S2 (separate file). Sequence file for the multispecies coalescent analysis in BPP.

Dataset S3 (separate file). Coancestry matrix in pajek format, input for infomap clustering.

Dataset S4 (separate file). Input file for the fossilized birth-death divergence dating.

Dataset S5 (separate file). Supplementary Tables in a single Excel spreadsheet file.

Dataset S6 (separate file). Climatic and soil data at places with *Heterocephalus* presence.

Dataset S7 (separate file). Overview of biological samples used.

Dataset S8 (separate file). Raw sequences of *CYTB* and nuclear genes.

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