

Online Resource 4:

Postcranial evolution of the insular lineage of *Nesiotites* Bate 1944 (Lipotyphla: Nectogalini) from *Asoriculus* to extinction

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Morphofunctional Indices:

Olecranon length index (OLI): Olecranon process length divided by functional length of the ulna (UOP/UFL). Indicates relative mechanical advantage of the triceps brachii and dorsoepitrochlearis muscles used in elbow extension. This is identical to the index of fossorial ability used by Hildebrand (1985).

Shoulder moment index (SMI): Deltopectoral crest length divided by functional length of the humerus (HPDC/HL). Indicates mechanical advantage of the deltoid and pectoral muscles acting across the shoulder joint.

Humeral epicondylar index (HEB): Epicondylar breadth of humerus divided by functional length of the humerus (HDW/HL). Indicates relative area available for the origins of the forearm flexors, pronators, and supinators.

Femoral epicondylar index (FEB): Epicondylar breadth of femur divided by the functional length of the femur (FDW/FL). Indicates relative area available for the origins of the gastrocnemius and soleus muscles used in extension of the knee and plantar-flexion of the pes.

Brachial index (BI): Functional length of the ulna divided by functional length of the humerus (UFL/HL). Indicates relative proportions of proximal and distal elements of the forelimb. Note that in Woodman & Wilken 2019 or Bover et al. 2010 this index was calculated with the functional length of the radius.

Femoral robustness index (FRI): Mediolateral diameter of femur divided by functional length of the femur (FLD/FL). Indicates robustness of the femur and its ability to resist bending and shearing stresses.

Humeral robustness index (HRI): Mediolateral diameter of humerus divided by functional length of the humerus (HLD/HL). Indicates robustness of the humerus and its ability to resist bending and shearing stresses.

Extra indices used in the set without *Asoriculus sp.* (Set B)

Intermembral index (IM): Functional lengths of the humerus and ulna divided by lengths of the femur and tibia $[(HL + UL)/(FL + TL)]$. Indicates the length of the forelimb relative to the hind limb.

Crural index (CI): Functional length of the tibia divided by functional length of the femur (TL/FL) . Indicates relative proportions of proximal and distal elements of the hind limb.

Tibial robustness index (TRI): Distal epicondylar breadth of the tibia divided by functional length of the tibia (TDW/TL) . Indicates robustness of the tibia and its ability to resist bending and shearing stresses.

Table S1. Percentile values (0–100) of postcranial locomotor indices for fossil shrews included in Set A, calculated relative to the distribution of extant soricid taxa. Percentiles are based on taxon-level mean values for each index. Set A includes all indices applicable to both *Asoriculus* and *Nesiotites* forming the basis for comparisons discussed in the main text (see Results).

Taxon	BI	FEB	FRI	HEB	HRI	OLI	SMI
<i>Asoriculus</i> sp.	48	31	41	10	52	3	17
<i>Nesiotites ponsi</i>	7	28	76	24	76	3	72
<i>N. hidalgo</i> – Cova Estreta	3	17	86	38	69	3	28
<i>N. hidalgo</i> – Cova de Canet	0	24	90	41	86	3	24
<i>N. hidalgo</i> – Cova des Garrover	3	21	76	41	86	3	24

Table S2. Percentile values of locomotor indices for Set B (excluding *Asoriculus*). Percentile ranks (0–100) of each locomotor index calculated relative to the distribution of extant shrews. Set B includes the full set of indices but excludes *Asoriculus* due to missing measurements. Higher percentile values indicate more extreme morphologies within the extant reference sample.

Taxon	BI	CI	FEB	FRI	HEB	HRI	IM	OLI	SMI	TRI
<i>Nesiotites ponsi</i>	7	48	28	76	24	76	28	3	72	59
<i>N. hidalgo</i> – Cova Estreta	3	52	17	86	38	69	45	3	28	72
<i>N. hidalgo</i> – Cova des Garrover	3	59	21	76	41	86	59	3	24	34
<i>N. hidalgo</i> – Cova de Canet	0	52	24	90	41	86	59	3	24	66

Table S3. Mean Percentile Rank (MPR) values for extant and fossil soricids. Mean Percentile Rank (MPR) values calculated from locomotor indices for each taxon using Set A (7 indices; includes *Asoriculus*) and Set B (11 indices; excludes *Asoriculus*). MPR values range from 0 to 100 and summarize the relative position of each taxon within the overall distribution of locomotor morphologies, with higher values indicating more specialized morphologies and lower values indicating generalized ambulatory traits.

Taxon	Status	MPR (Set A)	MPR (Set B)
<i>Asoriculus</i> sp.	Extinct	29.00	—
<i>Nesiotites ponsi</i>	Extinct	41.00	41.00
<i>N. hidalgo</i> – Cova Estreta	Extinct	30.00	30.00
<i>N. hidalgo</i> – Cova de Canet	Extinct	40.00	44.00
<i>N. hidalgo</i> – Cova des Garrover	Extinct	38.00	38.00
<i>Surdisorex norae</i>	Extant	81.53	69.31
<i>Cryptotis lacertosus</i>	Extant	80.05	—
<i>Cryptotis oreoryctes</i>	Extant	75.62	68.28
<i>Blarina brevicauda jerrychoatei</i>	Extant	78.57	65.52
<i>Blarina brevicauda talpoides</i>	Extant	75.62	63.10
<i>Blarina carolinensis</i>	Extant	—	63.10
<i>Neomys anomalus</i>	Extant	55.17	51.72
<i>Neomys fodiens</i>	Extant	52.46	50.00
<i>Crocidura russula</i>	Extant	34.48	31.03
<i>Crocidura suaveolens</i>	Extant	31.03	27.59
<i>Sorex minutus</i>	Extant	29.31	24.14
<i>Sorex coronatus</i>	Extant	27.59	22.41
<i>Suncus etruscus</i>	Extant	20.69	17.24

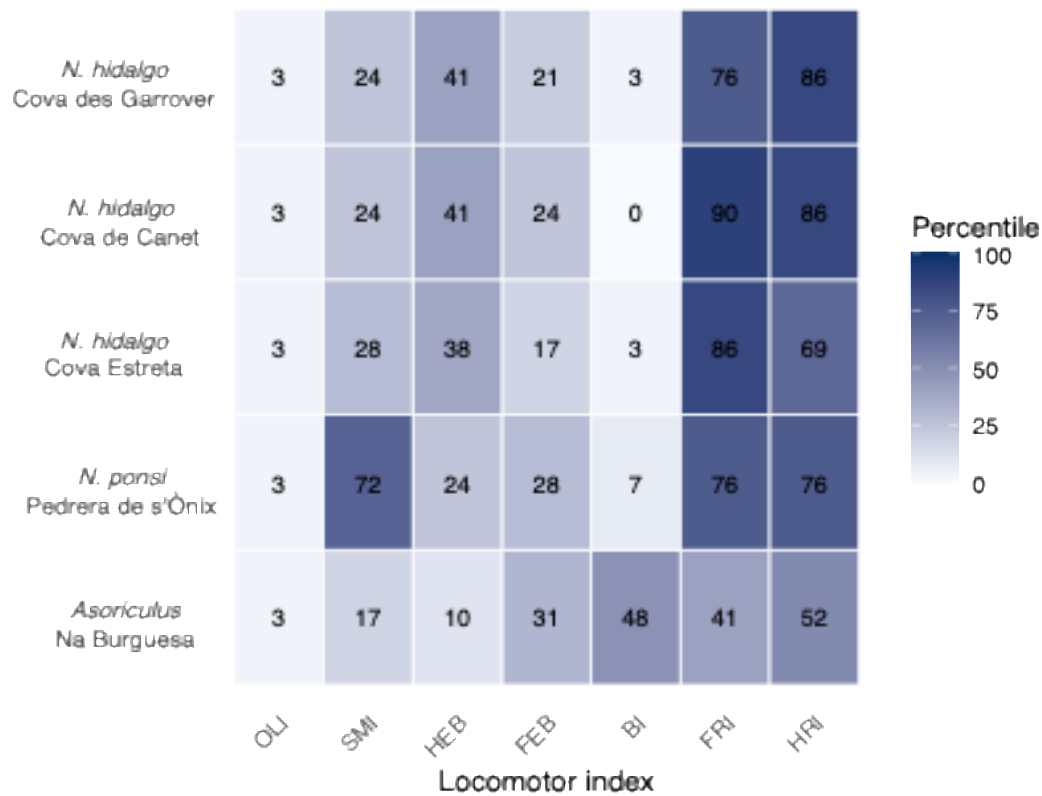


Figure S1. Heatmap showing percentile values of locomotor indices for fossil and extant taxa included in index Set A. Percentiles are calculated relative to the full comparative sample of extant shrews (see Table S-1). Rows correspond to taxa or fossil populations, and columns to individual locomotor indices. Darker colors indicate higher percentile values within the extant distribution. Set A includes seven indices and allows the inclusion of *Asoriculus*.

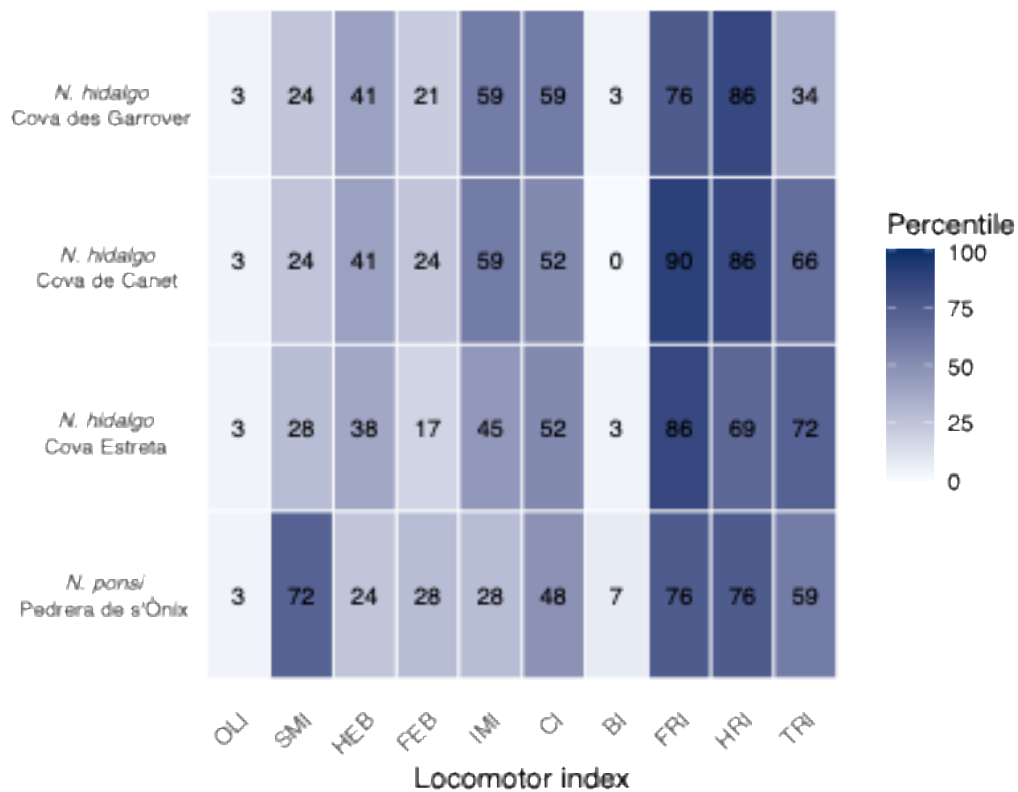


Figure S2. Heatmap showing percentile values of locomotor indices for fossil populations included in index Set B. Percentiles are calculated relative to the extant comparative sample (see Table S-2). Rows correspond to fossil populations and columns to locomotor indices. Darker colors indicate higher percentile values. Set B includes the full set of indices but excludes *Asoriculus* due to missing measurements.