

Supplementary material to:

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Dung beetles (Scarabaeidae: Scarabaeinae) attracted to carrion in Ghana, West Africa and evidence for adult food source plasticity

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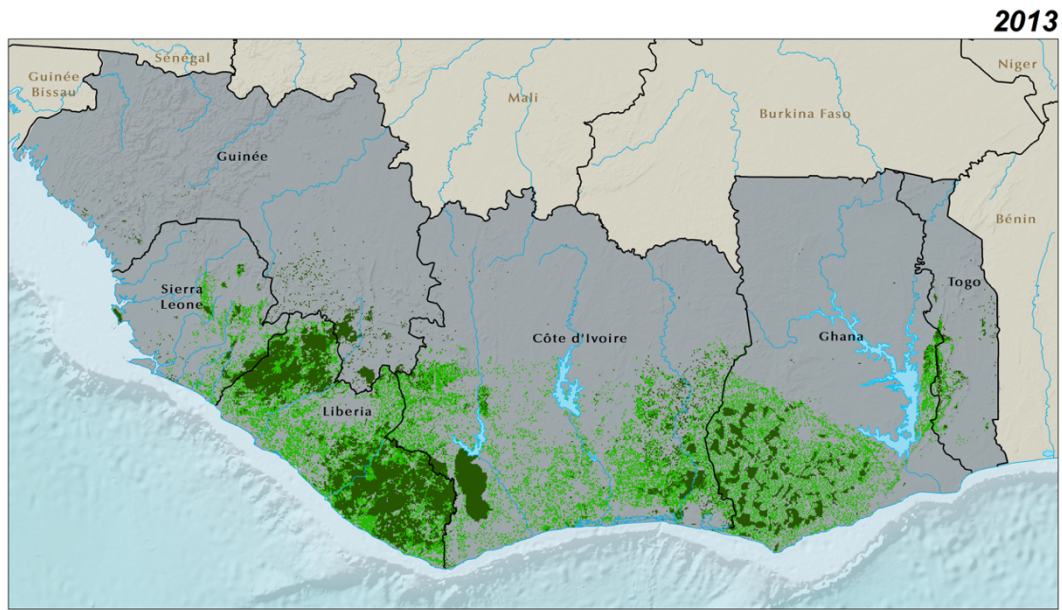


Figure S1. Current estimated extent of the Upper Guinean Forest in 2013. Intact forest indicated in dark green and disturbed remnants indicated by light green colour. Note that the intact forest was once a large contiguous ecosystem and now is largely reduced to small remnants. From <https://eros.usgs.gov/westafrica/land-cover/deforestation-upper-guinean-forest> (accessed 24 June 2021).

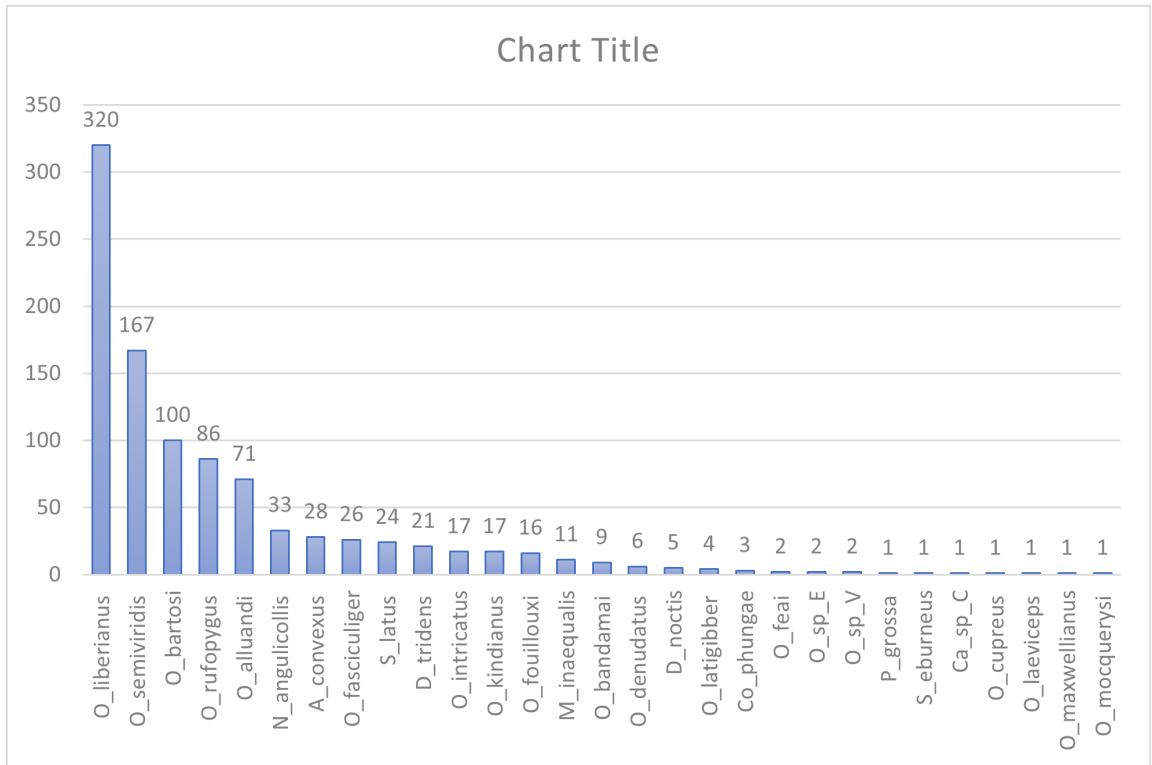


Figure S2a. Rank abundance of species collected from all forest sites and the Shai Hills savannah.

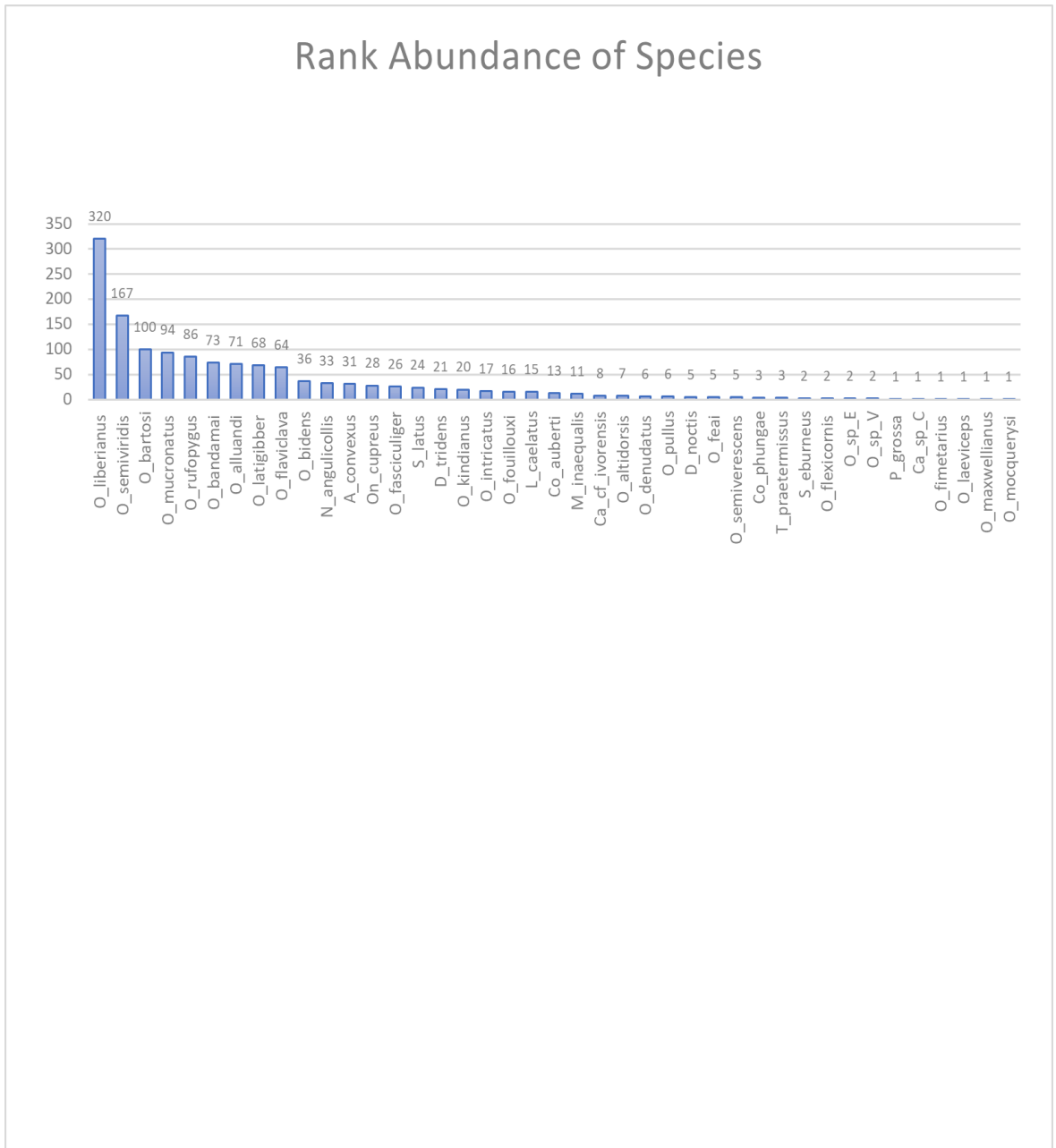


Figure S2b. Rank abundance from all forest sites only. The top ten species were all in the genus *Onthophagus* and the most abundant species was *Onthophagus liberianus* (see Table 2 for total abundance of each species at each site). Generic abbreviations are as follows: A = *Chalconotus*, Co = *Copris*, Ca = *Caccobius*, D = *Diastellopalpus*, L = *Latodrepanus*, M = *Milichus*, N = *Neosisyphus*, On = *Onitis*, O = *Onthophagus*, P = *Pseudopedaria*, S = *Sisyphus*, T = *Tiniocellus*.

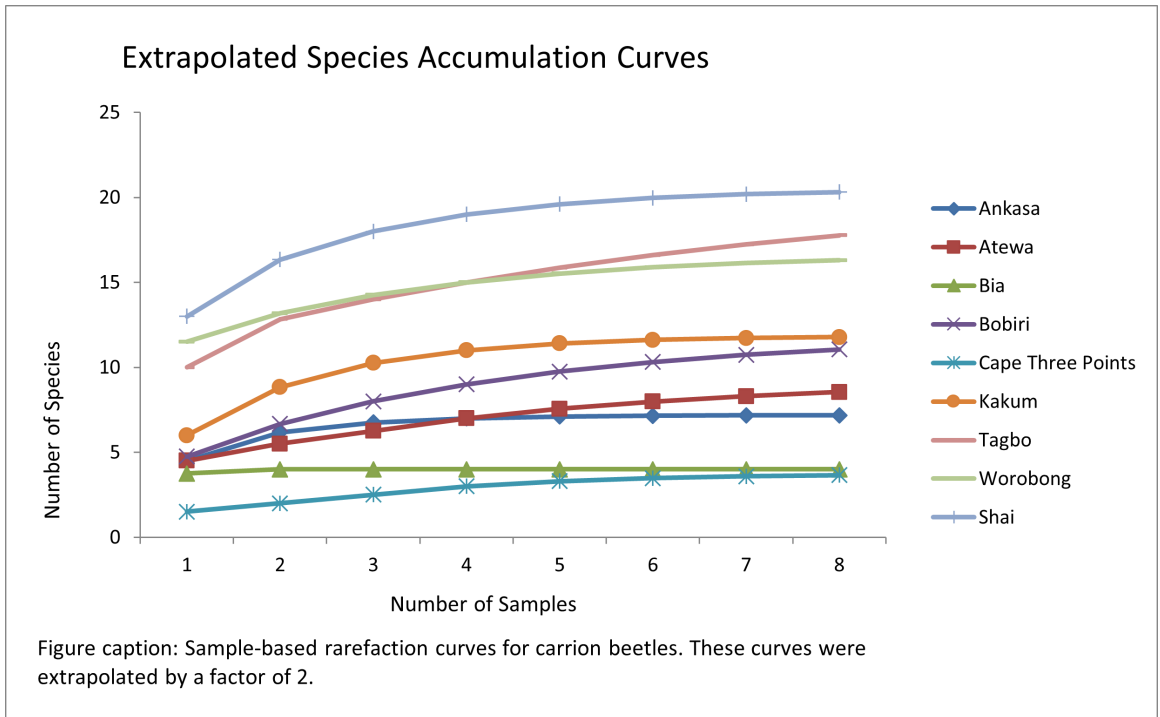


Figure S3. Sample-based rarefaction curves from 1000 multiple run randomisations. These curves were extrapolated by a factor of two.

Table S1. Localities sampled, forest vegetation, and the coordinates and elevation for each site.

Locality	Vegetation	Coordinates	Elevation
8 - Ankasa	Evergreen Forest	N5° 16.928', W2° 38.496'	80 m
5 - Atewa	Semideciduous Forest	N 6° 13.831', W 0° 33.477'	730 m
9 - Bia	Semideciduous Forest	N6°32.553', W3°2.075'	190 m
1 - Bobiri	Semideciduous Forest	N 6° 41.297', W 1° 20.593'	240 m
3 - Cape 3-Pts.	Evergreen Forest	N4°46.214', 2°4.592'	30 m
4 - Kakum	Semideciduous Forest	N5°21.25', W1°23.50'	193 m
7 - Shai Hills	Coastal Scrub/grassland	N 5°52.992', E 0° 2.563'	70 m
2 - Tagbo	Semideciduous Forest	N 7° 1.018', E 0° 33.443'	260 m
6 - Worobong	Semideciduous Forest	N 6°26.085', W 0° 27.008'	550 m

Table S2. Species diversity and abundance at each of the nine sites sampled.

Species	Anka a	Atewa a	Bi a	Bobir i	Cap e 3 Pts	Kaku m	Sha i	Tagb o	Worobon g	Tota l
<i>Chalconotus convexus</i> (Fabricius)	0	0	1	4	3	1	3	18	2	32
<i>Copris phungae</i> Cambefort	0	0	0	0	0	3	0	0	0	3
<i>Pseudopedaria grossa</i> (Thomson)	0	0	0	0	0	0	0	0	1	1
<i>Neosisyphus angulicollis</i> (Felsche)	0	9	11	1	0	4	0	0	8	33
<i>Sisyphus eburneus</i> Cambefort	0	0	0	0	0	1	1	0	0	2
<i>Sisyphus latus</i> Boucomont	0	0	0	0	0	1	0	0	23	24
<i>Onitis cupreus</i> Castelnau	0	0	0	0	1	0	27	0	0	28
<i>Latodrepanus caelatus</i> (Gerstacker)	0	0	0	0	0	0	15	0	0	15
<i>Tiniocellus praetermissus</i> Branco	0	0	0	0	0	0	3	0	0	3
<i>Diastellopalpus noctis</i> (Thomson)	0	0	0	0	0	0	0	0	5	5
<i>Diastellopalpus tridens</i> (Fabricius)	0	0	0	15	0	0	0	6	0	21
<i>Milichus inaequalis</i> Boucomont	0	0	0	0	0	0	0	0	1	1
<i>Milichus</i> n. sp.?	0	0	0	0	0	0	0	0	10	10
<i>Onthophagus alluaudi</i> d'Orbigny	0	0	0	1	0	5	0	26	39	71
<i>Onthophagus altidorsis</i> d'Orbigny	0	0	0	0	0	0	7	0	0	7
<i>Onthophagus bandamai</i> Cambefort	0	0	0	0	0	0	64	9	0	73
<i>Onthophagus bartosi</i> Balthasar	5	7	6	28	0	2	0	21	31	100
<i>Onthophagus bidens</i> (Olivier)	0	0	0	0	0	0	36	0	0	36
<i>Onthophagus denudatus</i> d'Orbigny	0	0	0	0	0	0	0	6	0	6
<i>Onthophagus fasciculiger</i> d'Orbigny	3	2	0	0	0	0	0	0	21	26
<i>Onthophagus feai</i> d'Orbigny	1	0	0	0	0	0	3	1	0	5
<i>Onthophagus fimetarius</i> Roth	0	0	0	0	0	0	1	0	0	1
<i>Onthophagus flaviclava</i> d'Orbigny	0	0	0	0	0	0	64	0	0	64
<i>Onthophagus flexicornis</i> d'Orbigny	0	0	0	0	0	0	2	0	0	2

<i>Onthophagus fouillouxii</i> Cambefort	5	1	0	1	0	8	0	0	1	16
<i>Onthophagus intricatus</i> Moretto	0	0	0	0	0	0	0	17	0	17
<i>Onthophagus kindianus</i> Frey	0	0	0	0	0	0	3	15	2	20
<i>Onthophagus laeviceps</i> d'Orbigny	0	0	0	0	0	0	0	1	0	1
<i>Onthophagus latigibber</i> d'Orbigny	0	0	0	0	0	0	64	4	0	68
<i>Onthophagus liberianus</i> Landberge	7	53	7	49	0	14	0	124	66	320
<i>Onthophagus maxwellianus</i> Moretto	0	0	0	0	0	0	0	0	1	1
<i>Onthophagus mocquersyi</i> d'Orbigny	0	0	0	0	0	0	0	1	0	1
<i>Onthophagus mucronatus</i> Thomson	0	0	0	0	0	0	94	0	0	94
<i>Onthophagus pullus</i> Roth	0	0	0	0	0	0	6	0	0	6
<i>Onthophagus rufopygus</i> Frey	10	26	0	0	1	7	0	0	42	86
<i>Onthophagus semiverescens</i> d'Orbigny	0	0	0	0	0	0	5	0	0	5
<i>Onthophagus semiviridis</i> d'Orbigny	57	1	28	3	12	7	0	11	48	167
<i>Onthophagus</i> sp._E	0	0	0	2	0	0	0	0	0	2
<i>Onthophagus</i> sp._V	0	0	0	0	0	2	0	0	0	2
<i>Caccobius auberti</i> d'Orbigny	0	0	0	0	0	0	13	0	0	13
<i>Caccobius cf_ivoirensis</i> Cambefort	0	0	0	0	0	0	8	0	0	8
<i>Caccobius</i> sp._C	0	0	0	0	0	0	0	1	0	1
Total # of individuals	88	99	53	104	17	55	419	261	301	1398
Total # of species	7	7	5	9	4	12	19	15	16	42