**Shallow evolutionary divergence between two Andean hummingbirds: Speciation with gene flow?**

**SUPPLEMENTARY INFORMATION**

**Running tittle**: Divergence with Gene Flow in Hummingbirds

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## Supplementary Methods

## Methods S1

### DNA samples and protocols

PCR mixes to amplify the *ND2* gene were prepared to a final volume of 25µl contained 2µl of DNA, 1.0X of Taq buffer, 3.0mM of MgCl2, 0.2mM of each dNTP, 0.48µM of each primer L5215 and H6313 (Sorenson, Ast, Dimcheff, Yuri, & Mindell, 1999), and 1U of Taq DNA polymerase recombinant (Invitrogen). Amplification conditions were as following: 94°C for 5min for initial denaturation, 35 cycles of 94°C for 45s for denaturation, 20 cycles of touch down -0.5°C from 62°C to 52°C plus 15 cycles to 52°C for 45s for annealing, and 72°C for 1min for extension, and a final extension of 72°C for 7 min.

PCR mixes to amplify the *MC1R* gene were prepared to a final volume of 25l and contained 2 µl of DNA, 1.0X of Taq buffer, 3.0mM of MgCl2, 0.2mM of each dNTP, 0.48µM of each primer 1corMSHR9 and 1corMHSR72 (Cheviron, Hackett, & Brumfield, 2006), 0.08% of BSA, and 1U of Taq DNA polymerase recombinant (Invitrogen). Amplification conditions were as following: 94ºC for 5min for initial denaturation, 35 cycles of 94ºC for 30s for denaturation, 64°C for 45s for annealing and 72°C for 60s for extension, and a final extension of 72°C for 5min.

We used as *ND2* outgroup sequences to *Coeligena lutetiae* GenBank: FJ903516.1 and EU042542.1, and *Coeligena orina* GenBank: KJ602225.1 and KJ602224.1, and as *MC1R* outgroup sequences to *Calypte anna* GenBank: XM_008491753 partial sequence, and *Chaetura pelagica* GenBank: XM_010008427.

## References

Cheviron, Z. a, Hackett, S. J., & Brumfield, R. T. (2006). Sequence variation in the coding region of the melanocortin-1 receptor gene (MC1R) is not associated with plumage variation in the blue-crowned manakin (Lepidothrix coronata). *Proceedings. Biological Sciences / The Royal Society*, *273*(1594), 1613–8. https://doi.org/10.1098/rspb.2006.3499

Sorenson, M. D., Ast, J. C., Dimcheff, D. E., Yuri, T., & Mindell, D. P. (1999). Primers for a PCR-based approach to mitochondrial genome sequencing in birds and other vertebrates.

*Molecular Phylogenetics and Evolution*, *12*(2), 105–14.
https://doi.org/10.1006/mpev.1998.0602

## Supplementary Figures

**Figure S1**. Structure Plots for K=1 to K=5 for UCEs SNPs data. K=1 has the highest probability (red box).

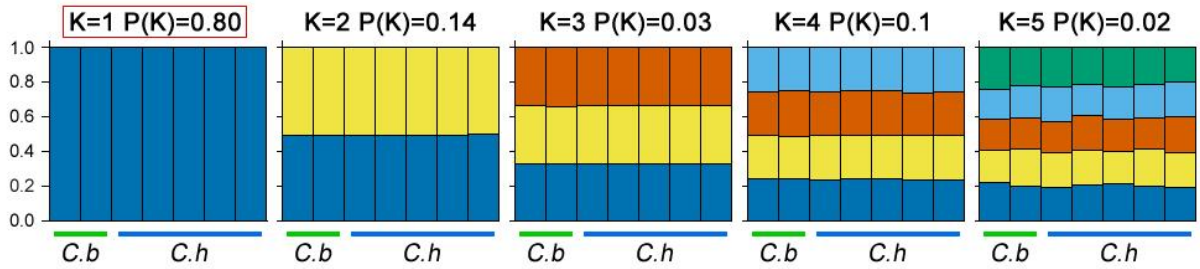
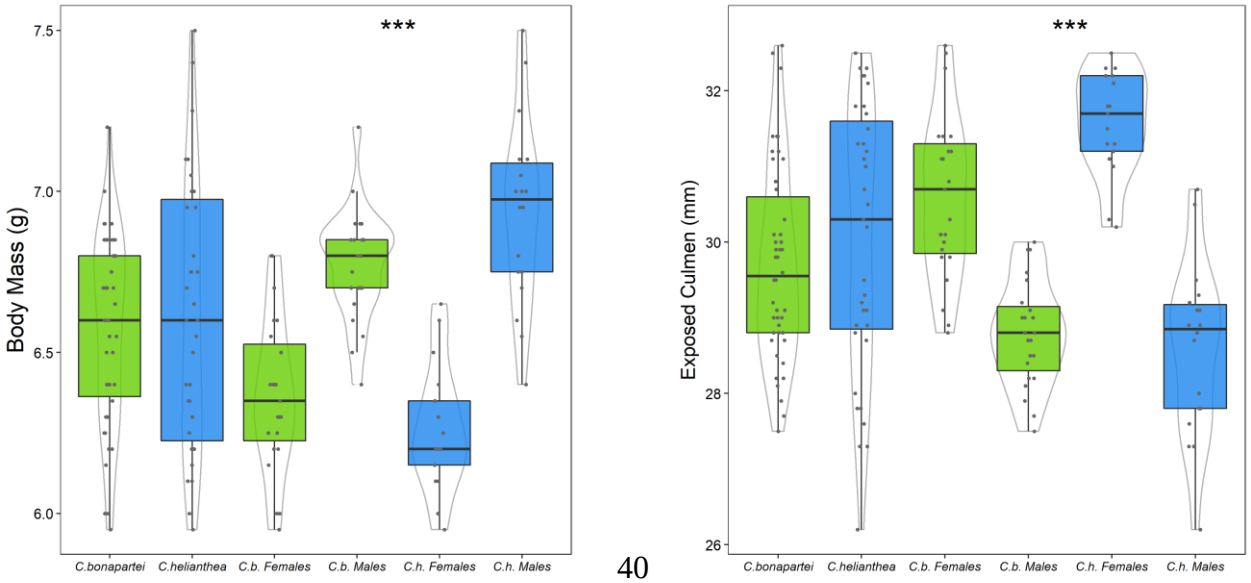



**Figure S2.** Boxplots of 17 morphological variables for the species and for the sexes in the species. Asterisks at the top of the figures correspond to the values of significance in the ANOVA, * $p < 0.05$, ** $p < 0.01$ and *** $p<0.001$



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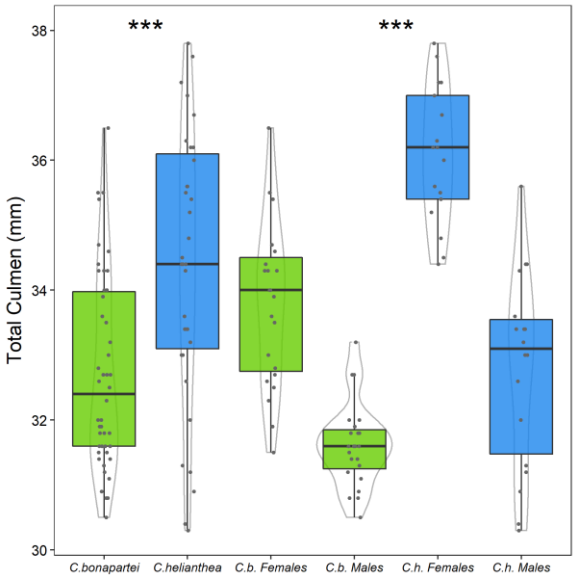
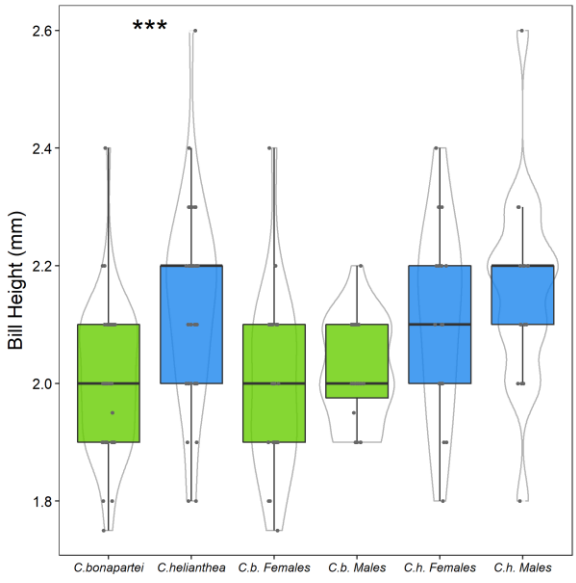
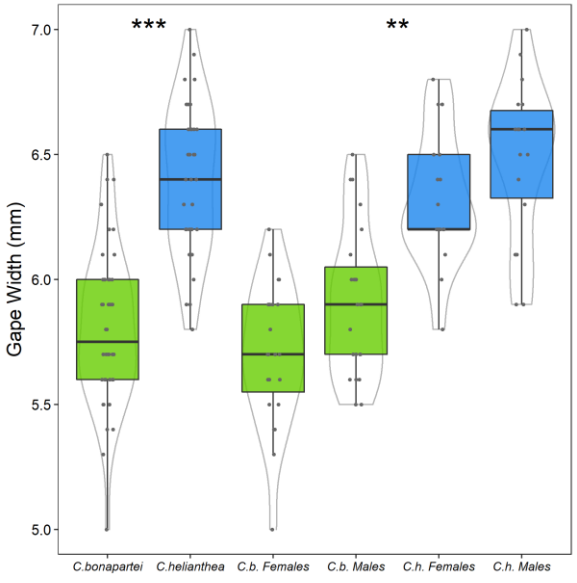

Total Culmen (mm)
38
36
34
32
30
***
***
C.bonapartei
C.helianthea
C.b. Females
C.b. Males
C.h. Females
C.h. Males

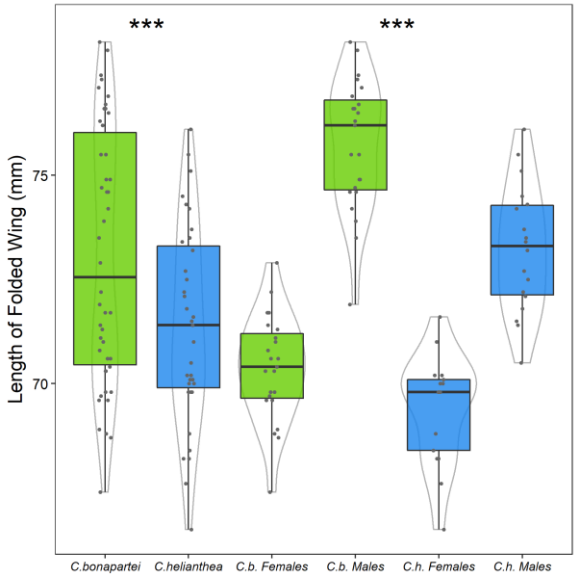
43

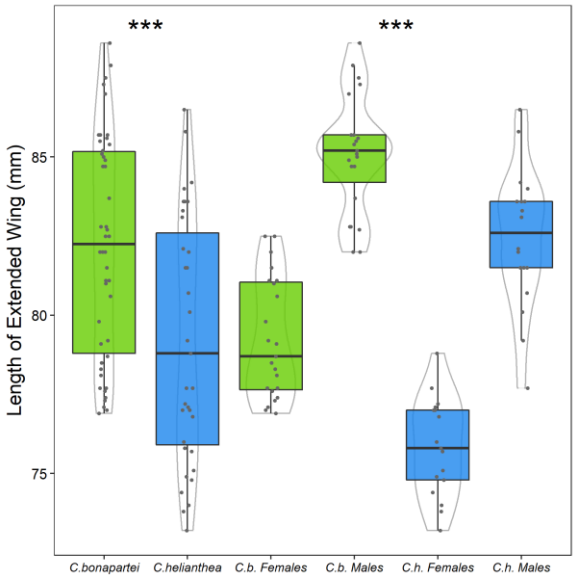

Bill Height (mm)
2.6
2.4
2.2
2.0
1.8
***
C.bonapartei
C.helianthea
C.b. Females
C.b. Males
C.h. Females
C.h. Males

42

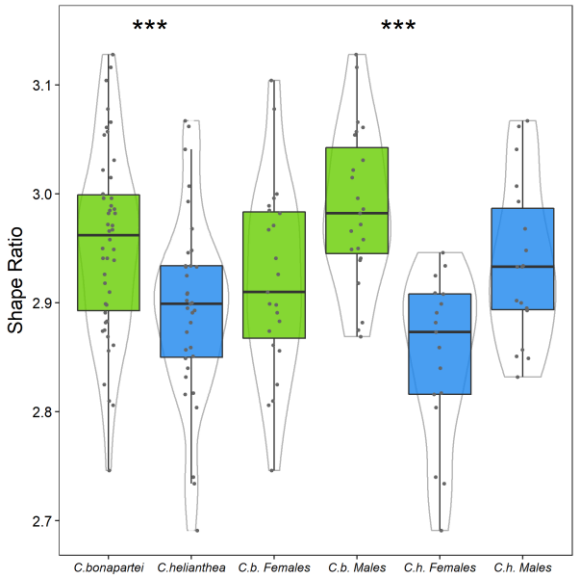

Gape Width (mm)
7.0
6.5
6.0
5.5
5.0
***
**
C.bonapartei
C.helianthea
C.b. Females
C.b. Males
C.h. Females
C.h. Males

44

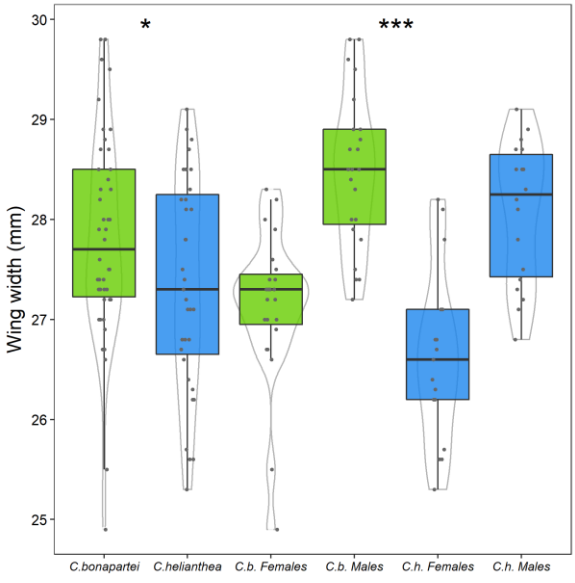

Length of Folded Wing (mm)
75
70
***
***
C.bonapartei
C.helianthea
C.b. Females
C.b. Males
C.h. Females
C.h. Males


***
***
Length of Extended Wing (mm)
85
80
75
C.bonapartei
C.helianthea
C.b. Females
C.b. Males
C.h. Females
C.h. Males

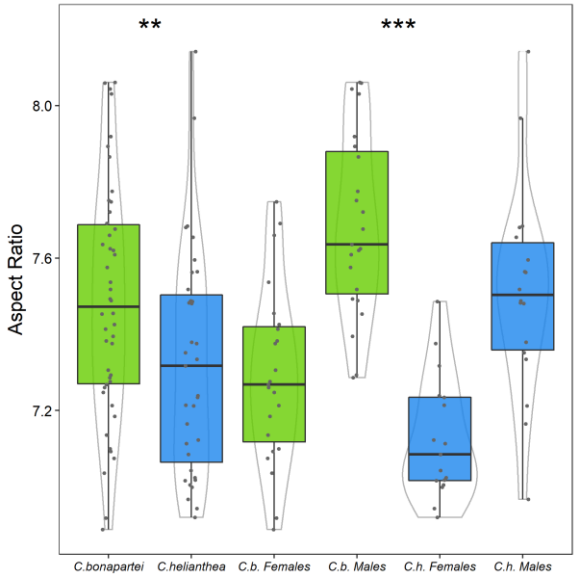
45


***
***
Shape Ratio
3.1
3.0
2.9
2.8
2.7
C.bonapartei
C.helianthea
C.b. Females
C.b. Males
C.h. Females
C.h. Males

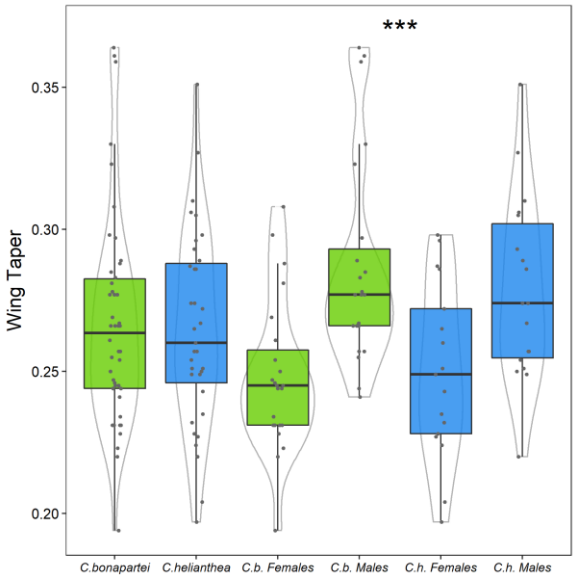
47


*
***
Wing width (mm)
30
29
28
27
26
25
C.bonapartei
C.helianthea
C.b. Females
C.b. Males
C.h. Females
C.h. Males

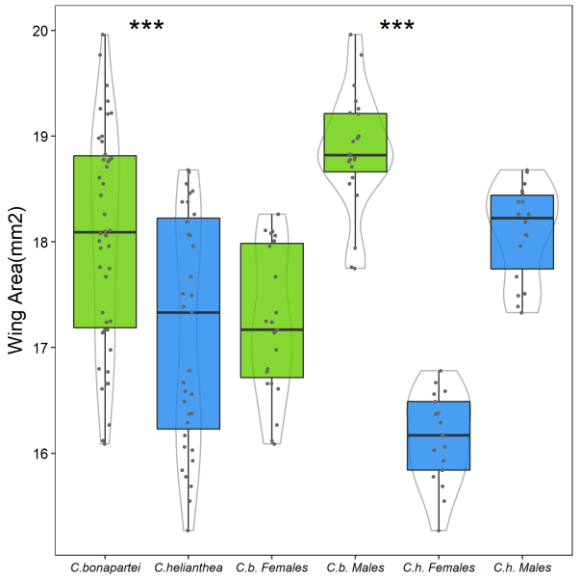
46


**
***
Aspect Ratio
8.0
7.6
7.2
C.bonapartei
C.helianthea
C.b. Females
C.b. Males
C.h. Females
C.h. Males

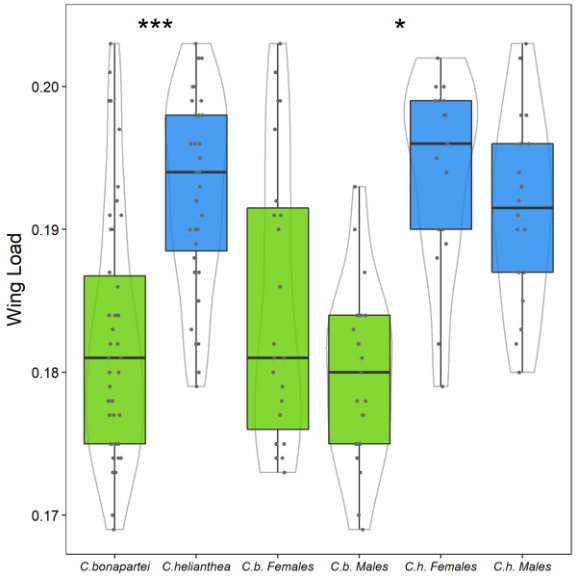
48


***
Wing Taper
0.35
0.30
0.25
0.20
C.bonapartei
C.helianthea
C.b. Females
C.b. Males
C.h. Females
C.h. Males

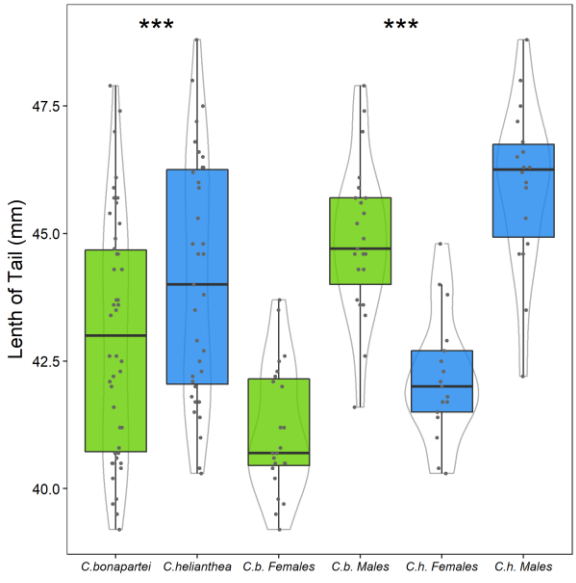
49


***
***
Wing Area(mm2)
20
19
18
17
16
C.bonapartei
C.helianthea
C.b. Females
C.b. Males
C.h. Females
C.h. Males

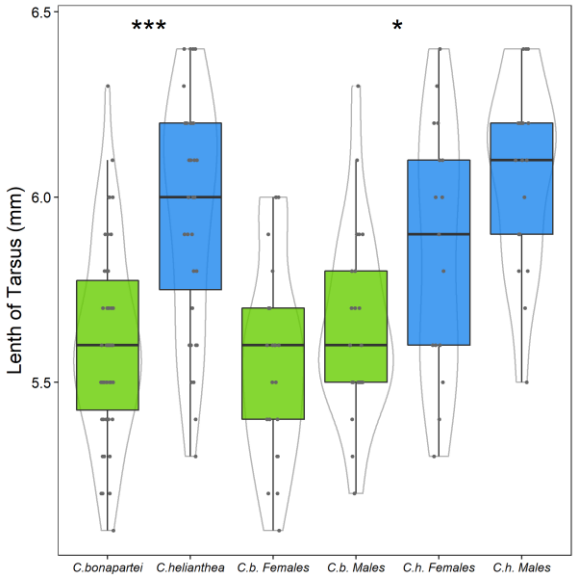
51


***
*
Wing Load
0.20
0.19
0.18
0.17
C.bonapartei
C.helianthea
C.b. Females
C.b. Males
C.h. Females
C.h. Males

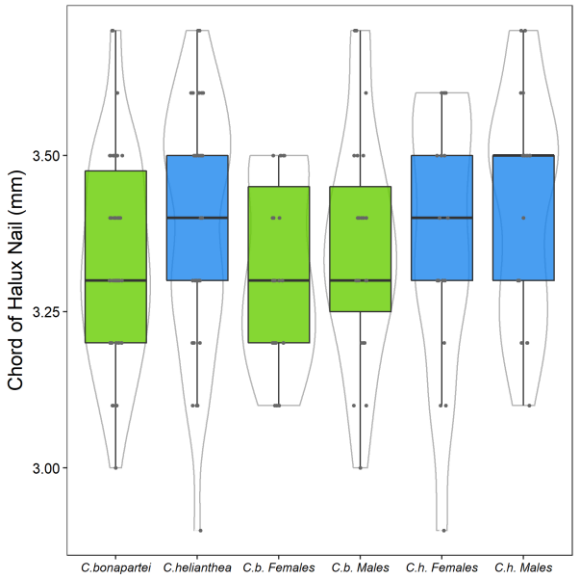
50


***
***
Lenth of Tail (mm)
47.5
45.0
42.5
40.0
C.bonapartei
C.helianthea
C.b. Females
C.b. Males
C.h. Females
C.h. Males

52

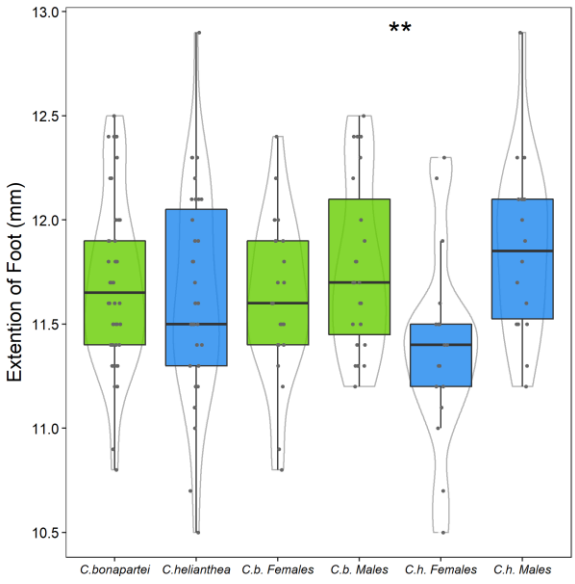

***
*
Lenth of Tarsus (mm)
6.5
6.0
5.5
C.bonapartei
C.helianthea
C.b. Females
C.b. Males
C.h. Females
C.h. Males

53


Chord of Halux Nail (mm)
3.50
3.25
3.00
C.bonapartei
C.helianthea
C.b. Females
C.b. Males
C.h. Females
C.h. Males

55

56


**
Extention of Foot (mm)
13.0
12.5
12.0
11.5
11.0
10.5
C.bonapartei
C.helianthea
C.b. Females
C.b. Males
C.h. Females
C.h. Males

54

## Supplementary Tables

**Table S1. Specimens sampled data.** The samples ID corresponds to the number of the specimens in the tissue collection or to the collector number.

| Sample ID | Species - Subspecies | | Sex | ND2 | MC1R | UCEs | Collector # | Collector Name | Museum | Country | State | LAT | LONG | Loc. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Andes-BT 1287 | *Coeligena bonapartei* | *consita* | F | Yes | Yes | Yes | JEAC 683 | Avendaño, Jorge E. | ICN Aves 36833 | Colombia | Cesar | 10.36694444 | -72.89747222 | 1 |
| Andes-BT 1288 | *Coeligena bonapartei* | *consita* | F | Yes | | | JPL 053 | Lopez, Juan Pablo | ICN Aves 36820 | Colombia | Cesar | 10.36694444 | -72.89747222 | 1 |
| Andes-BT 1289 | *Coeligena bonapartei* | *consita* | M | Yes | | | JPL 052 | Lopez, Juan Pablo | ICN Aves 36819 | Colombia | Cesar | 10.36694444 | -72.89747222 | 1 |
| Andes-BT 1290 | *Coeligena bonapartei* | *consita* | M | Yes | | | JPL 058 | Lopez, Juan Pablo | ICN Aves 36841 | Colombia | Cesar | 10.36694444 | -72.89747222 | 1 |
| Andes-BT 1292 | *Coeligena bonapartei* | *consita* | M | Yes | | | JPL 055 | Lopez, Juan Pablo | ICN Aves 36822 | Colombia | Cesar | 10.36694444 | -72.89747222 | 1 |
| Andes-BT 2006 | *Coeligena bonapartei* | *bonapartei* | F | Yes | | Yes | JLPV74 | Parra V., Juan Luis | ? | Colombia | Cundinamarca | 4.929 | -74.1121 | 15 |
| IAvH-CT-00002277 | *Coeligena bonapartei* | *bonapartei* | M | Yes | Yes | | 73 | Sierra, Maria | IAvH-12299 | Colombia | Boyacá | 5.7225 | -73.6297 | 12 |
| IAvH-CT-00004191 | *Coeligena bonapartei* | *bonapartei* | M | Yes | | | MAE 256 | Echeverry, María | IAvH-12581 | Colombia | Boyacá | 5.8475 | -73.4628 | 11 |
| IAvH-CT-00006791 | *Coeligena bonapartei* | *bonapartei* | M | Yes | Yes | | SS-824 | Sierra, Maria | IAvH-13986 | Colombia | Cundinamarca | 4.6271 | -74.3076 | 17 |
| IAvH-CT-2265 | *Coeligena bonapartei* | *bonapartei* | F | Yes | Yes | | 19 | Sierra, Maria | IAvH-12290 | Colombia | Boyacá | 5.6394 | -73.4872 | 14 |
| IAvH-CT-2271 | *Coeligena bonapartei* | *bonapartei* | F | Yes | Yes | | 31 | Sierra, Maria | IAvH-12292 | Colombia | Boyacá | 5.6394 | -73.4872 | 14 |
| IAvH-CT-4188 | *Coeligena bonapartei* | *bonapartei* | M | Yes | Yes | | MAE 253 | Echeverry, María | IAvH-12578 | Colombia | Boyacá | 5.8475 | -73.4628 | 11 |
| IAvH-CT-6802 | *Coeligena bonapartei* | *bonapartei* | F | Yes | Yes | | SS-835 | Sierra, Maria | IAvH-13997 | Colombia | Cundinamarca | 4.6271 | -74.3076 | 17 |
| IAvH-CT-6966 | *Coeligena bonapartei* | *bonapartei* | F | Yes | Yes | | SS-937 | Sierra, Maria | IAvH-14196 | Colombia | Boyacá | 5.7066 | -73.4601 | 13 |
| IAvH-CT-6973 | *Coeligena bonapartei* | *bonapartei* | M | Yes | Yes | | SS-944 | Sierra, Maria | IAvH-14203 | Colombia | Boyacá | 5.7046 | -73.4572 | 13 |
| JEAC_642 | *Coeligena bonapartei* | *bonapartei* | F | Yes | | | JEAC_642 | Avendaño, Jorge E. | ICN Aves 36894 | Colombia | Santander | 6.6334 | -73.3944 | 10 |
| JEAC_645 | *Coeligena bonapartei* | *bonapartei* | M | Yes | | | JEAC_645 | Avendaño, Jorge E. | ICN Aves 36897 | Colombia | Santander | 6.6334 | -73.3944 | 10 |
| Andes-BT 1124 | *Coeligena helianthea* | *tamai* | F | Yes | | | SS 1254 | Cuervo, Andres | IAvH 14911 | Colombia | Norte de Santander | 7.418083333 | -72.44306667 | 6 |
| Andes-BT 1125 | *Coeligena helianthea* | *tamai* | M | Yes | Yes | | SS 1253 | Cuervo, Andres | IAvH 14910 | Colombia | Norte de Santander | 7.418083333 | -72.44306667 | 6 |
| Andes-BT 1126 | *Coeligena helianthea* | *tamai* | M | Yes | Yes | | SS 1251 | Cuervo, Andres | IAvH 14908 | Colombia | Norte de Santander | 7.418083333 | -72.44306667 | 6 |
| Andes-BT 1127 | *Coeligena helianthea* | *tamai* | F | Yes | Yes | | SS 1248 | Cuervo, Andres | IAvH 14906 | Colombia | Norte de Santander | 7.418083333 | -72.44306667 | 6 |
| Andes-BT 1128 | *Coeligena helianthea* | *tamai* | F | Yes | | Yes | SS 1242 | Cuervo, Andres | IAvH 14899 | Colombia | Norte de Santander | 7.418083333 | -72.44306667 | 6 |
| Andes-BT 1129 | *Coeligena helianthea* | *tamai* | F | Yes | Yes | Yes | SS 1240 | Cuervo, Andres | IAvH 14897 | Colombia | Norte de Santander | 7.418083333 | -72.44306667 | 6 |
| Andes-BT 1130 | *Coeligena helianthea* | *tamai* | M | Yes | Yes | | SS 1228 | Cuervo, Andres | IAvH 14885 | Colombia | Norte de Santander | 7.418083333 | -72.44306667 | 6 |
| Andes-BT 1131 | *Coeligena helianthea* | *tamai* | F | Yes | Yes | | SS 1227 | Cuervo, Andres | IAvH 14884 | Colombia | Norte de Santander | 7.418083333 | -72.44306667 | 6 |
| Andes-BT 1570 | *Coeligena helianthea* | *helianthea* | M | No | | Yes | JEAC 823 | Avendaño, Jorge E. | ICN Aves 37550 | Colombia | Santander | 6.73083334 | -72.79563889 | 9 |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Andes-BT 163 | *Coeligena helianthea* | *tamai* | F | Yes | | | JM 904 | Miranda, Jhonathan | ? | Colombia | Norte de Santander | 7.3042 | -72.37108333 | 8 |
| Andes-BT 170 | *Coeligena helianthea* | *tamai* | M | Yes | Yes | Yes | AMC 1009 | Cuervo, Andres | IAvH-A-8406 | Colombia | Norte de Santander | 7.3042 | -72.37108333 | 8 |
| Andes-BT 70 | *Coeligena helianthea* | *helianthea* | F | Yes | Yes | | JEAC 551 | Avendaño, Jorge E. | ICN Aves 36307 | Colombia | Meta | 4.3213 | -73.7768 | 19 |
| Andes-BT 813 | *Coeligena helianthea* | *helianthea* | *?* | No | Yes | | FGS | Stiles, F. Gary | ? | Colombia | Cundinamarca | ? | ? | Na |
| Andes-BT 902 | *Coeligena helianthea* | *tamai* | F | Yes | | | SS 1142 | Cuervo, Andres | IAvH 14799 | Colombia | Norte de Santander | 7.418083333 | -72.44306667 | 6 |
| Andes-BT 916 | *Coeligena helianthea* | *tamai* | M | Yes | | | SS 1161 | Cuervo, Andres | IAvH 14818 | Colombia | Norte de Santander | 7.418083333 | -72.44306667 | 6 |
| Andes-BT 931 | *Coeligena helianthea* | *tamai* | F | Yes | | Yes | SS 1179 | Cuervo, Andres | IAvH 14836 | Colombia | Norte de Santander | 7.418083333 | -72.44306667 | 6 |
| Andes-BT 933 | *Coeligena helianthea* | *tamai* | M | Yes | | | SS 1307 | Cuervo, Andres | IAvH 14964 | Colombia | Norte de Santander | 7.403216667 | -72.44146667 | 7 |
| Andes-BT 940 | *Coeligena helianthea* | *tamai* | M | Yes | Yes | | SS 1314 | Cuervo, Andres | IAvH 14971 | Colombia | Norte de Santander | 7.403216667 | -72.44146667 | 7 |
| IAvH-CT-00002504 | *Coeligena helianthea* | *helianthea* | M | Yes | Yes | | 1004 | Umaña, Ana | IAvH-12590 | Colombia | Meta | 4.4939 | -73.6925 | 18 |
| IAvH-CT-00002569 | *Coeligena helianthea* | *helianthea* | F | Yes | Yes | | 42 | Echeverry, María | IAvH-12682 | Colombia | Cundinamarca | 4.7036 | -73.8511 | 16 |
| IAvH-CT-11474 | *Coeligena helianthea* | *tamai* | M | Yes | Yes | | SS 1258 | Cuervo, Andres | IAvH 14915 | Colombia | Norte de Santander | 7.418083333 | -72.44306667 | 6 |
| IAvH-CT-11511 | *Coeligena helianthea* | *tamai* | F | Yes | Yes | | SS 1255 | Cuervo, Andres | IAvH 14912 | Colombia | Norte de Santander | 7.418083333 | -72.44306667 | 6 |
| IAvH-CT-2530 | *Coeligena helianthea* | *helianthea* | F | Yes | Yes | | 1138 | Umaña, Ana | IAvH-12633 | Colombia | Meta | 4.4939 | -73.6925 | 18 |
| IAvH-CT-2599 | *Coeligena helianthea* | *helianthea* | M | Yes | Yes | | 165 | Echeverry, María | IAvH-12719 | Colombia | Cundinamarca | 4.7036 | -73.8511 | 16 |
| AMC 1135 | *Coeligena bonapartei* | *eos* | ? | Yes | Yes | | AMC 1135 | Cuervo, Andres | COP-IZET | Venezuela | Tachira | 8.01425 | -71.9638 | 3 |
| AMC 1160 | *Coeligena bonapartei* | *eos* | ? | Yes | Yes | | AMC 1160 | Cuervo, Andres | COP-IZET | Venezuela | Tachira | 8.01425 | -71.9638 | 3 |
| AMC 1233 | *Coeligena bonapartei* | *eos* | ? | Yes | Yes | | AMC 1233 | Cuervo, Andres | COP-IZET | Venezuela | Tachira | 7.973611111 | -71.96888889 | 5 |
| JEM 147 | *Coeligena bonapartei* | *eos* | ? | Yes | Yes | | JEM 147 | Cuervo, Andres | COP-IZET | Venezuela | Tachira | 8.208194444 | -71.97048333 | 2 |
| JEM 188 | *Coeligena bonapartei* | *eos* | ? | Yes | | | JEM 188 | Cuervo, Andres | COP-IZET | Venezuela | Tachira | 8.01425 | -71.9638 | 3 |
| JEM 189 | *Coeligena bonapartei* | *eos* | ? | Yes | Yes | | JEM 189 | Cuervo, Andres | COP-IZET | Venezuela | Tachira | 8.01425 | -71.9638 | 3 |
| JEM 190 | *Coeligena bonapartei* | *eos* | ? | Yes | Yes | | JEM 190 | Cuervo, Andres | COP-IZET | Venezuela | Tachira | 8.01425 | -71.9638 | 3 |
| JEM 191 | *Coeligena bonapartei* | *eos* | ? | Yes | | | JEM 191 | Cuervo, Andres | COP-IZET | Venezuela | Tachira | 8.01425 | -71.9638 | 3 |
| JEM 192 | *Coeligena bonapartei* | *eos* | ? | Yes | | | JEM 192 | Cuervo, Andres | COP-IZET | Venezuela | Tachira | 8.01425 | -71.9638 | 3 |
| JEM 229 | *Coeligena bonapartei* | *eos* | ? | Yes | | | JEM 229 | Cuervo, Andres | COP-IZET | Venezuela | Tachira | 8.01425 | -71.9638 | 3 |
| JEM 230 | *Coeligena bonapartei* | *eos* | ? | Yes | Yes | | JEM 230 | Cuervo, Andres | COP-IZET | Venezuela | Tachira | 8.01425 | -71.9638 | 3 |
| JEM 231 | *Coeligena bonapartei* | *eos* | ? | Yes | Yes | | JEM 231 | Cuervo, Andres | COP-IZET | Venezuela | Tachira | 8.01425 | -71.9638 | 3 |
| JEM 237 | *Coeligena bonapartei* | *eos* | ? | Yes | Yes | | JEM 237 | Cuervo, Andres | COP-IZET | Venezuela | Tachira | 8.01425 | -71.9638 | 3 |
| JM 930 | *Coeligena bonapartei* | *eos* | ? | Yes | | | JM 930 | Cuervo, Andres | COP-IZET | Venezuela | Tachira | 8.01425 | -71.9638 | 3 |
| JPL 262 | *Coeligena bonapartei* | *eos* | ? | Yes | | | JPL 262 | Cuervo, Andres | COP-IZET | Venezuela | Tachira | 8.005633333 | -71.97258333 | 4 |
| JPL 268 | *Coeligena bonapartei* | *eos* | ? | Yes | Yes | | JPL 268 | Cuervo, Andres | COP-IZET | Venezuela | Tachira | 8.005633333 | -71.97258333 | 4 |
| JPL 269 | *Coeligena bonapartei* | *eos* | ? | Yes | | | JPL 269 | Cuervo, Andres | COP-IZET | Venezuela | Tachira | 8.005633333 | -71.97258333 | 4 |
| JPL 270 | *Coeligena bonapartei* | *eos* | ? | Yes | | | JPL 270 | Cuervo, Andres | COP-IZET | Venezuela | Tachira | 8.005633333 | -71.97258333 | 4 |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| KCC 96 | *Coeligena bonapartei* | *eos* | ? | Yes | | | KCC 96 | Cuervo, Andres | COP-IZET | Venezuela | Tachira | 8.005633333 | -71.97258333 | 4 |
| YPL 108 | *Coeligena bonapartei* | *eos* | ? | Yes | | | YPL 108 | Cuervo, Andres | COP-IZET | Venezuela | Tachira | 8.005633333 | -71.97258333 | 4 |
| YPL 109 | *Coeligena bonapartei* | *eos* | ? | Yes | Yes | | YPL 109 | Cuervo, Andres | COP-IZET | Venezuela | Tachira | 8.005633333 | -71.97258333 | 4 |

**Table S2. Climate variables kept for overlapping analysis after removing correlated variables.**

| Layer | Source | Related to |
|---|---|---|
| Mean Diurnal Range (Mean of monthly (max temp - min temp)) | worldclim | Temperature |
| Temperature Seasonality (standard deviation *100) | worldclim | Temperature |
| Mean Temperature of Wettest Quarter | worldclim | Temperature |
| Precipitation Seasonality (Coefficient of Variation) | worldclim | Precipitation |
| Precipitation of Warmest Quarter | worldclim | Precipitation |
| Precipitation of Coldest Quarter | worldclim | Precipitation |
| Highest weekly moisture index | climond | Moisture |
| Inter-annual variability (SD) | earthenv | Cloudiness |
| Seasonality concentration | earthenv | Cloudiness |
| Seasonality theta | earthenv | Cloudiness |
| Spatial variability (1 degree SD) | earthenv | Cloudiness |

**Table S3.** Morphometric data. ID: Sample ID; Bom: Body mass; RBm: Cube root of body mass; ExpC: Exposed culmen; REC: Exposed culmen corrected by the cube root of body mass; TotC: Total culmen; RTC: Total culmen corrected by the cube root of body mass; Gw: Gape width; RGw: Gape width corrected by the cube root of body mass; Bih: Bill height; RBh: Bill height corrected by the cube root of body mass; LfW: Length of folded wing; RLfW: Length of folded wing corrected by the cube root of body mass; LeW: Length of extended wing; RLeW: Length of extended wing corrected by the cube root of body mass; Ww:

Wing width; RWw: Wing width corrected by the cube root of body mass; Rs: Shape ratio (L/Amax); Ra: Aspect ratio; Wtap: Wing taper; Pw: Wing loading; Wa: Wing area; LTl: Length of tail; RLT: Length of tail corrected by the cube root of body mass; LTs: Length of tarsus; RLTs: Length of tarsus corrected by the cube root of body mass; EF: Extension of foot; REF: Extension of foot corrected by the cube root of body mass; ChN: Chord of Halux nail; RChN: Chord of Halux nail corrected by the cube root of body mass; Sex: Sex; Sp: Species: Cb *Coeligena bonapartei*; Ch *Coeligena helianthea*.

| ID | Bom | RBm | ExpC | REC | TotC | RTC | Gw | RGw | Bih | RBh | LfW | RLfW | LeW | RLeW | Ww | RWw |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 398 | 6.80 | 1.8945 | 30.30 | 15.99 | 33.70 | 17.79 | | | | | 75.70 | 39.96 | 81.60 | 43.07 | 27.80 | 14.67 |
| 399 | 6.75 | 1.8899 | 29.50 | 15.61 | 32.60 | 17.25 | | | | | 73.60 | 38.94 | 79.00 | 41.80 | 27.20 | 14.39 |
| 516 | 6.70 | 1.8852 | 28.40 | 15.06 | 31.30 | 16.60 | 5.70 | 3.02 | 2.10 | 1.11 | 74.20 | 39.36 | 82.00 | 43.50 | 27.90 | 14.80 |
| 800 | 6.90 | 1.9038 | 28.10 | 14.76 | 30.80 | 16.18 | 5.70 | 2.99 | 2.10 | 1.10 | 74.90 | 39.34 | 83.70 | 43.96 | 28.30 | 14.87 |
| 807 | 6.90 | 1.9038 | 27.70 | 14.55 | 31.10 | 16.34 | 5.60 | 2.94 | 2.10 | 1.10 | 73.90 | 38.82 | 84.90 | 44.60 | 27.80 | 14.60 |
| 810 | 6.75 | 1.8899 | 28.50 | 15.08 | 31.40 | 16.61 | 5.70 | 3.02 | 2.00 | 1.06 | 75.50 | 39.95 | 85.60 | 45.29 | 28.00 | 14.82 |
| 817 | 6.70 | 1.8852 | 30.00 | 15.91 | 31.80 | 16.87 | 5.90 | 3.13 | 1.90 | 1.01 | 77.40 | 41.06 | 87.00 | 46.15 | 28.70 | 15.22 |
| 822 | 6.85 | 1.8992 | 28.20 | 14.85 | 31.90 | 16.80 | 6.10 | 3.21 | 1.90 | 1.00 | 76.60 | 40.33 | 82.00 | 43.18 | 27.20 | 14.32 |
| 942 | 7.20 | 1.9310 | 29.90 | 15.48 | 32.70 | 16.93 | 6.00 | 3.11 | 2.10 | 1.09 | 76.70 | 39.72 | 85.70 | 44.38 | 28.00 | 14.50 |
| 944 | 6.80 | 1.8945 | 29.00 | 15.31 | 31.60 | 16.68 | 5.60 | 2.96 | 2.00 | 1.06 | 78.00 | 41.17 | 85.20 | 44.97 | 29.20 | 15.41 |
| 1398 | 6.85 | 1.8992 | 29.10 | 15.32 | 31.60 | 16.64 | 5.70 | 3.00 | 2.00 | 1.05 | 75.50 | 39.75 | 85.50 | 45.02 | 29.80 | 15.69 |
| 1399 | 6.70 | 1.8852 | 28.70 | 15.22 | 31.20 | 16.55 | 5.50 | 2.92 | 2.10 | 1.11 | 74.70 | 39.62 | 85.00 | 45.09 | 28.90 | 15.33 |
| 1409 | 6.65 | 1.8805 | 29.90 | 15.90 | 33.20 | 17.65 | 5.50 | 2.92 | 1.90 | 1.01 | 76.20 | 40.52 | 82.80 | 44.03 | 28.80 | 15.32 |
| 1540 | 7.00 | 1.9129 | 29.50 | 15.42 | 31.60 | 16.52 | 6.20 | 3.24 | 2.00 | 1.05 | 77.30 | 40.41 | 88.60 | 46.32 | 28.90 | 15.11 |
| 1541 | 6.85 | 1.8992 | 29.00 | 15.27 | 30.50 | 16.06 | 6.30 | 3.32 | 2.10 | 1.11 | 74.60 | 39.28 | 85.10 | 44.81 | 28.50 | 15.01 |
| 1624 | 6.85 | 1.8992 | 29.00 | 15.27 | 32.00 | 16.85 | 5.60 | 2.95 | 1.90 | 1.00 | 76.90 | 40.49 | 85.70 | 45.12 | 27.50 | 14.48 |
| 1630 | 6.50 | 1.8663 | 28.50 | 15.27 | 31.50 | 16.88 | 6.00 | 3.21 | 1.95 | 1.04 | 71.90 | 38.53 | 82.80 | 44.37 | 27.40 | 14.68 |
| 1713 | 6.90 | 1.9038 | 28.80 | 15.13 | 30.90 | 16.23 | 5.90 | 3.10 | 2.00 | 1.05 | 77.10 | 40.50 | 85.40 | 44.86 | 28.50 | 14.97 |
| 1825 | 6.55 | 1.8710 | 28.80 | 15.39 | 31.60 | 16.89 | 6.00 | 3.21 | 2.00 | 1.07 | 78.20 | 41.80 | 87.90 | 46.98 | 29.80 | 15.93 |
| 2001 | 6.80 | 1.8945 | 28.20 | 14.89 | 30.80 | 16.26 | 6.40 | 3.38 | 2.00 | 1.06 | 74.60 | 39.38 | 84.70 | 44.71 | 28.40 | 14.99 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2008 | 6.40 | 1.8566 | 29.20 | 15.73 | 31.80 | 17.13 | 5.80 | 3.12 | 2.10 | 1.13 | 76.50 | 41.20 | 87.30 | 47.02 | 29.60 | 15.94 |
| 2031 | 6.85 | 1.8992 | 27.50 | 14.48 | 32.00 | 16.85 | 6.50 | 3.42 | 2.20 | 1.16 | 76.30 | 40.17 | 87.50 | 46.07 | 29.50 | 15.53 |
| 2038 | 6.60 | 1.8758 | 28.70 | 15.30 | 31.40 | 16.74 | 5.90 | 3.15 | 2.00 | 1.07 | 74.90 | 39.93 | 85.70 | 45.69 | 27.40 | 14.61 |
| 2040 | 6.85 | 1.8992 | 29.60 | 15.59 | 32.70 | 17.22 | 6.00 | 3.16 | 2.10 | 1.11 | 76.60 | 40.33 | 84.70 | 44.60 | 28.50 | 15.01 |
| 2041 | 6.70 | 1.8852 | 27.90 | 14.80 | 31.80 | 16.87 | 6.40 | 3.39 | 1.90 | 1.01 | 73.50 | 38.99 | 82.70 | 43.87 | 28.70 | 15.22 |
| 17 | 6.30 | 1.8469 | 30.30 | 16.41 | 34.50 | 18.68 | | | | | 71.10 | 38.50 | 78.20 | 42.34 | 27.30 | 14.78 |
| 400 | 6.40 | 1.8566 | 31.00 | 16.70 | 34.60 | 18.64 | | | | | 70.80 | 38.13 | 77.10 | 41.53 | 26.10 | 14.06 |
| 515 | 6.00 | 1.8171 | 32.50 | 17.89 | 34.30 | 18.88 | 5.70 | 3.14 | 2.10 | 1.16 | 70.80 | 38.96 | 78.10 | 42.98 | 27.30 | 15.02 |
| 671 | 6.40 | 1.8566 | 31.40 | 16.91 | 35.50 | 19.12 | 5.90 | 3.18 | 2.00 | 1.08 | 68.70 | 37.00 | 78.50 | 42.28 | 25.50 | 13.73 |
| 672 | 6.60 | 1.8758 | 31.20 | 16.63 | 34.60 | 18.45 | 6.00 | 3.20 | 2.10 | 1.12 | 70.30 | 37.48 | 79.10 | 42.17 | 26.90 | 14.34 |
| 397 | 6.70 | 1.8852 | 31.40 | 16.66 | 35.50 | 18.83 | 5.80 | 3.08 | 1.90 | 1.01 | 71.30 | 37.82 | 77.70 | 41.22 | 26.70 | 14.16 |
| 799 | 6.80 | 1.8945 | 31.20 | 16.47 | 34.40 | 18.16 | 5.50 | 2.90 | 2.20 | 1.16 | 70.60 | 37.27 | 78.70 | 41.54 | 27.30 | 14.41 |
| 802 | 6.60 | 1.8758 | 30.10 | 16.05 | 34.00 | 18.13 | 5.70 | 3.04 | 2.00 | 1.07 | 69.70 | 37.16 | 77.40 | 41.26 | 26.70 | 14.23 |
| 806 | 6.30 | 1.8469 | 30.30 | 16.41 | 33.90 | 18.36 | 5.90 | 3.19 | 1.90 | 1.03 | 69.60 | 37.68 | 79.20 | 42.88 | 27.40 | 14.84 |
| 808 | 6.20 | 1.8371 | 31.10 | 16.93 | 34.30 | 18.67 | 5.40 | 2.94 | 2.10 | 1.14 | 70.40 | 38.32 | 79.80 | 43.44 | 26.60 | 14.48 |
| 809 | 6.55 | 1.8710 | 28.90 | 15.45 | 31.50 | 16.84 | 5.60 | 2.99 | 2.10 | 1.12 | 72.20 | 38.59 | 81.10 | 43.35 | 27.30 | 14.59 |
| 818 | 6.50 | 1.8663 | 29.90 | 16.02 | 34.00 | 18.22 | 5.70 | 3.05 | 1.90 | 1.02 | 71.10 | 38.10 | 77.00 | 41.26 | 27.40 | 14.68 |
| 815 | 6.40 | 1.8566 | 32.30 | 17.40 | 35.40 | 19.07 | 5.40 | 2.91 | 1.80 | 0.97 | 70.60 | 38.03 | 80.60 | 43.41 | 27.00 | 14.54 |
| 816 | 6.40 | 1.8566 | 30.00 | 16.16 | 32.30 | 17.40 | 5.00 | 2.69 | 1.90 | 1.02 | 69.80 | 37.60 | 77.10 | 41.53 | 27.00 | 14.54 |
| 1235 | 6.30 | 1.8469 | 30.80 | 16.68 | 34.30 | 18.57 | 5.70 | 3.09 | 2.10 | 1.14 | 71.70 | 38.82 | 81.50 | 44.13 | 27.20 | 14.73 |
| 1238 | 6.80 | 1.8945 | 31.10 | 16.42 | 33.50 | 17.68 | 5.60 | 2.96 | 2.10 | 1.11 | 71.40 | 37.69 | 82.50 | 43.55 | 27.60 | 14.57 |
| 1395 | 6.25 | 1.8420 | 29.50 | 16.02 | 32.80 | 17.81 | 5.50 | 2.99 | 2.00 | 1.09 | 70.30 | 38.17 | 81.00 | 43.97 | 27.30 | 14.82 |
| 1446 | 6.40 | 1.8566 | 28.80 | 15.51 | 32.70 | 17.61 | 5.70 | 3.07 | 2.10 | 1.13 | 72.90 | 39.27 | 81.10 | 43.68 | 27.20 | 14.65 |
| 1625 | 6.15 | 1.8321 | 30.70 | 16.76 | 32.60 | 17.79 | 5.30 | 2.89 | 2.00 | 1.09 | 69.80 | 38.10 | 77.30 | 42.19 | 24.90 | 13.59 |
| 1992 | 6.25 | 1.8420 | 29.10 | 15.80 | 31.90 | 17.32 | 6.00 | 3.26 | 2.40 | 1.30 | 67.40 | 36.59 | 76.90 | 41.75 | 28.00 | 15.20 |
| 2005 | 6.30 | 1.8469 | 32.60 | 17.65 | 36.50 | 19.76 | 5.90 | 3.19 | 1.90 | 1.03 | 71.70 | 38.82 | 82.50 | 44.67 | 28.20 | 15.27 |
| 2039 | 6.20 | 1.8371 | 29.80 | 16.22 | 33.00 | 17.96 | 5.90 | 3.21 | 1.90 | 1.03 | 68.80 | 37.45 | 77.70 | 42.29 | 27.50 | 14.97 |
| 2042 | 6.00 | 1.8171 | 30.10 | 16.56 | 32.50 | 17.89 | 5.60 | 3.08 | 1.80 | 0.99 | 68.90 | 37.92 | 78.30 | 43.09 | 27.90 | 15.35 |
| 2043 | 6.35 | 1.8518 | 31.40 | 16.96 | 34.70 | 18.74 | 6.10 | 3.29 | 1.90 | 1.03 | 71.00 | 38.34 | 82.00 | 44.28 | 28.30 | 15.28 |
| 2044 | 5.95 | 1.8121 | 29.80 | 16.45 | 33.60 | 18.54 | 6.20 | 3.42 | 1.75 | 0.97 | 69.60 | 38.41 | 77.60 | 42.82 | 27.00 | 14.90 |
| JXV | 7.30 | 1.9399 | 26.30 | 13.56 | 29.20 | 15.05 | | | | | 72.50 | 37.37 | 80.50 | 41.50 | 27.40 | 14.12 |
| 299 | 7.40 | 1.9487 | 28.10 | 14.42 | 31.00 | 15.91 | | | | | 73.90 | 37.92 | 81.20 | 41.67 | 26.80 | 13.75 |
| 349 | 6.85 | 1.8992 | 30.50 | 16.06 | 32.60 | 17.17 | | | | | 73.30 | 38.60 | 81.60 | 42.97 | 27.30 | 14.37 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1727 | 7.00 | 1.9129 | 29.10 | 15.21 | 33.20 | 17.36 | 6.60 | 3.45 | 2.10 | 1.10 | 75.10 | 39.26 | 81.50 | 42.61 | 27.10 | 14.17 |
| 1729 | 7.25 | 1.9354 | 27.80 | 14.36 | 30.40 | 15.71 | 6.40 | 3.31 | 1.80 | 0.93 | 73.70 | 38.08 | 84.20 | 43.51 | 27.50 | 14.21 |
| 1754 | 6.60 | 1.8758 | 27.30 | 14.55 | 33.00 | 17.59 | 6.60 | 3.52 | 2.00 | 1.07 | 72.70 | 38.76 | 82.10 | 43.77 | 28.80 | 15.35 |
| 1772 | 6.95 | 1.9084 | 26.20 | 13.73 | 31.30 | 16.40 | 7.00 | 3.67 | 2.10 | 1.10 | 73.20 | 38.36 | 81.50 | 42.71 | 28.10 | 14.72 |
| 1773 | 6.80 | 1.8945 | 28.80 | 15.20 | 33.40 | 17.63 | 6.70 | 3.54 | 2.20 | 1.16 | 70.50 | 37.21 | 80.10 | 42.28 | 27.30 | 14.41 |
| 1779 | 7.00 | 1.9129 | 29.10 | 15.21 | 33.40 | 17.46 | 5.90 | 3.08 | 2.30 | 1.20 | 76.10 | 39.78 | 83.60 | 43.70 | 28.90 | 15.11 |
| 1781 | 6.75 | 1.8899 | 28.00 | 14.82 | 31.20 | 16.51 | 6.70 | 3.55 | 2.00 | 1.06 | 72.20 | 38.20 | 80.70 | 42.70 | 28.50 | 15.08 |
| 1782 | 6.40 | 1.8566 | 28.90 | 15.57 | 33.00 | 17.77 | 6.60 | 3.55 | 2.00 | 1.08 | 71.80 | 38.67 | 77.70 | 41.85 | 27.20 | 14.65 |
| 1788 | 6.70 | 1.8852 | 27.60 | 14.64 | 30.30 | 16.07 | 6.60 | 3.50 | 2.20 | 1.17 | 71.40 | 37.87 | 83.10 | 44.08 | 28.70 | 15.22 |
| 1794 | 7.40 | 1.9487 | 30.50 | 15.65 | 35.60 | 18.27 | 6.80 | 3.49 | 2.30 | 1.18 | 75.50 | 38.74 | 83.60 | 42.90 | 28.50 | 14.63 |
| 1795 | 7.05 | 1.9175 | 29.20 | 15.23 | 34.40 | 17.94 | 6.50 | 3.39 | 2.20 | 1.15 | 74.20 | 38.70 | 85.80 | 44.75 | 29.10 | 15.18 |
| 2032 | 6.55 | 1.8710 | 30.70 | 16.41 | 34.30 | 18.33 | 6.30 | 3.37 | 2.30 | 1.23 | 72.50 | 38.75 | 82.00 | 43.83 | 27.40 | 14.64 |
| 2068 | 7.50 | 1.9574 | 28.90 | 14.76 | 33.40 | 17.06 | 6.50 | 3.32 | 2.20 | 1.12 | 74.50 | 38.06 | 83.30 | 42.56 | 28.70 | 14.66 |
| 2322 | 6.75 | 1.8899 | 29.30 | 15.50 | 32.60 | 17.25 | 5.90 | 3.12 | 2.10 | 1.11 | 73.50 | 38.89 | 81.50 | 43.12 | 26.80 | 14.18 |
| 2601 | 7.10 | 1.9220 | 27.80 | 14.46 | 30.90 | 16.08 | 6.10 | 3.17 | 2.20 | 1.14 | 73.40 | 38.19 | 84.00 | 43.70 | 28.30 | 14.72 |
| 2691 | 7.10 | 1.9220 | 29.50 | 15.35 | 32.00 | 16.65 | 6.10 | 3.17 | 2.10 | 1.09 | 72.10 | 37.51 | 83.60 | 43.50 | 28.50 | 14.83 |
| 2890 | 7.00 | 1.9129 | 27.30 | 14.27 | 33.60 | 17.56 | 6.90 | 3.61 | 2.60 | 1.36 | 74.30 | 38.84 | 86.50 | 45.22 | 28.20 | 14.74 |
| 3018 | 6.95 | 1.9084 | 28.70 | 15.04 | 34.40 | 18.03 | 6.60 | 3.46 | 2.20 | 1.15 | 71.50 | 37.47 | 79.20 | 41.50 | 27.80 | 14.57 |
| 7 | 7.10 | 1.9220 | 33.50 | 17.43 | 38.30 | 19.93 | | | | | 70.80 | 36.84 | 78.60 | 40.89 | 26.70 | 13.89 |
| 25 | 6.70 | 1.8852 | 31.70 | 16.82 | 38.00 | 20.16 | | | | | 68.60 | 36.39 | 77.10 | 40.90 | 26.60 | 14.11 |
| 26 | 6.40 | 1.8566 | 32.30 | 17.40 | 35.40 | 19.07 | | | | | 71.30 | 38.40 | 76.20 | 41.04 | 27.00 | 14.54 |
| 134 | 6.10 | 1.8272 | 31.50 | 17.24 | 36.20 | 19.81 | | | | | 70.10 | 38.36 | 74.20 | 40.61 | 25.20 | 13.79 |
| BXX | 6.00 | 1.8171 | 32.30 | 17.78 | 37.20 | 20.47 | | | | | 69.70 | 38.36 | 74.90 | 41.22 | 24.80 | 13.65 |
| 1644 | 6.65 | 1.8805 | 31.50 | 16.75 | 34.40 | 18.29 | 6.20 | 3.30 | 2.10 | 1.12 | 70.10 | 37.28 | 77.00 | 40.95 | 28.10 | 14.94 |
| 1722 | 6.40 | 1.8566 | 31.30 | 16.86 | 34.50 | 18.58 | 6.40 | 3.45 | 1.90 | 1.02 | 68.20 | 36.73 | 75.10 | 40.45 | 25.60 | 13.79 |
| 1724 | 6.20 | 1.8371 | 31.80 | 17.31 | 35.20 | 19.16 | 6.20 | 3.37 | 2.00 | 1.09 | 68.40 | 37.23 | 74.00 | 40.28 | 25.30 | 13.77 |
| 1747 | 6.20 | 1.8371 | 31.10 | 16.93 | 37.20 | 20.25 | 6.70 | 3.65 | 2.20 | 1.20 | 71.60 | 38.97 | 75.80 | 41.26 | 26.30 | 14.32 |
| 1752 | 6.10 | 1.8272 | 32.30 | 17.68 | 36.20 | 19.81 | 6.30 | 3.45 | 1.80 | 0.99 | 70.20 | 38.42 | 74.80 | 40.94 | 27.80 | 15.21 |
| 1757 | 6.25 | 1.8420 | 30.30 | 16.45 | 36.20 | 19.65 | 6.50 | 3.53 | 2.10 | 1.14 | 69.80 | 37.89 | 78.80 | 42.78 | 27.10 | 14.71 |
| 1756 | 5.95 | 1.8121 | 32.50 | 17.93 | 37.60 | 20.75 | 6.20 | 3.42 | 2.00 | 1.10 | 66.50 | 36.70 | 77.70 | 42.88 | 26.80 | 14.79 |
| 1765 | 6.00 | 1.8171 | 32.20 | 17.72 | 36.70 | 20.20 | 6.20 | 3.41 | 2.10 | 1.16 | 71.00 | 39.07 | 77.10 | 42.43 | 28.20 | 15.52 |
| 1786 | 6.35 | 1.8518 | 31.00 | 16.74 | 36.00 | 19.44 | 6.40 | 3.46 | 2.20 | 1.19 | 68.80 | 37.15 | 74.90 | 40.45 | 26.60 | 14.36 |
| 1797 | 6.15 | 1.8321 | 31.70 | 17.30 | 35.50 | 19.38 | 6.80 | 3.71 | 2.20 | 1.20 | 69.80 | 38.10 | 75.70 | 41.32 | 25.70 | 14.03 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1798 | 6.50 | 1.8663 | 32.10 | 17.20 | 37.20 | 19.93 | 6.70 | 3.59 | 2.00 | 1.07 | 70.20 | 37.61 | 77.00 | 41.26 | 26.80 | 14.36 |
| 1800 | 6.20 | 1.8371 | 32.20 | 17.53 | 36.30 | 19.76 | 6.20 | 3.37 | 2.30 | 1.25 | 67.60 | 36.80 | 77.20 | 42.02 | 26.70 | 14.53 |
| 2033 | 6.10 | 1.8272 | 32.30 | 17.68 | 37.00 | 20.25 | 6.00 | 3.28 | 2.40 | 1.31 | 70.00 | 38.31 | 73.20 | 40.06 | 25.60 | 14.01 |
| 2034 | 6.30 | 1.8372 | 31.80 | 17.31 | 37.80 | 20.57 | 6.20 | 3.37 | 1.90 | 1.03 | 68.20 | 37.12 | 76.80 | 41.80 | 26.40 | 14.37 |
| 2064 | 6.35 | 1.8518 | 30.20 | 16.31 | 34.80 | 18.79 | 6.50 | 3.51 | 2.20 | 1.19 | 70.10 | 37.86 | 73.80 | 39.85 | 26.20 | 14.15 |
| 2067 | 6.20 | 1.8371 | 31.30 | 17.04 | 35.60 | 19.38 | 6.10 | 3.32 | 2.20 | 1.20 | 69.80 | 37.99 | 74.40 | 40.50 | 26.20 | 14.26 |
| 3017 | 6.60 | 1.8758 | 31.20 | 16.63 | 35.40 | 18.87 | 5.80 | 3.09 | 2.30 | 1.23 | 70.00 | 37.32 | 76.00 | 40.52 | 27.10 | 14.45 |
| 3071 | 6.10 | 1.8272 | 31.60 | 17.29 | 35.30 | 19.32 | 5.80 | 3.17 | 2.10 | 1.15 | 67.80 | 37.11 | 77.50 | 42.41 | 26.90 | 14.72 |
| **Continue** | | | | | | | | | | | | | | | | |
| **ID** | **Rs** | **Ra** | **Wtap** | **Pw** | **Wa** | **LTl** | **RLT** | **LTs** | **RLTs** | **EF** | **REF** | **ChN** | **RChN** | **Sex** | **Sp** | |
| 398 | 2.935 | 7.301 | 0.244 | 0.186 | 18.240 | 44.30 | 23.38 | 5.50 | 2.90 | 12.00 | 6.33 | 3.30 | 1.74 | M | Cb | |
| 399 | 2.904 | 7.145 | 0.230 | 0.193 | 17.470 | 43.80 | 23.18 | 5.90 | 3.12 | 11.80 | 6.24 | 3.20 | 1.69 | M | Cb | |
| 516 | 2.939 | 7.293 | 0.241 | 0.182 | 18.440 | 43.40 | 23.02 | 5.60 | 2.97 | 11.70 | 6.21 | 3.70 | 1.96 | M | Cb | |
| 800 | 2.958 | 7.489 | 0.266 | 0.184 | 18.710 | 44.60 | 23.43 | 5.70 | 2.99 | 11.80 | 6.20 | 3.40 | 1.79 | M | Cb | |
| 807 | 3.054 | 7.676 | 0.257 | 0.184 | 18.780 | 44.60 | 23.43 | 5.70 | 2.99 | 11.60 | 6.09 | 3.70 | 1.94 | M | Cb | |
| 810 | 3.057 | 7.609 | 0.244 | 0.175 | 19.260 | 43.60 | 23.07 | 5.50 | 2.91 | 11.40 | 6.03 | 3.50 | 1.85 | M | Cb | |
| 817 | 3.031 | 8.061 | 0.330 | 0.178 | 18.780 | 45.70 | 24.24 | 5.30 | 2.81 | 12.00 | 6.37 | 3.30 | 1.75 | M | Cb | |
| 822 | 3.015 | 7.576 | 0.257 | 0.193 | 17.750 | 44.70 | 23.54 | 5.40 | 2.84 | 11.50 | 6.06 | 3.30 | 1.74 | M | Cb | |
| 942 | 3.061 | 7.751 | 0.266 | 0.190 | 18.950 | 43.70 | 22.63 | 6.10 | 3.16 | 12.50 | 6.47 | 3.10 | 1.61 | M | Cb | |
| 944 | 2.918 | 7.453 | 0.277 | 0.175 | 19.480 | 46.10 | 24.33 | 5.50 | 2.90 | 12.30 | 6.49 | 3.20 | 1.69 | M | Cb | |
| 1398 | 2.869 | 7.395 | 0.289 | 0.173 | 19.770 | 45.90 | 24.17 | 5.60 | 2.95 | 11.50 | 6.06 | 3.40 | 1.79 | M | Cb | |
| 1399 | 2.941 | 7.518 | 0.278 | 0.174 | 19.220 | 42.60 | 22.60 | 5.70 | 3.02 | 11.30 | 5.99 | 3.20 | 1.70 | M | Cb | |
| 1409 | 2.875 | 7.286 | 0.267 | 0.177 | 18.820 | 44.60 | 23.72 | 5.80 | 3.08 | 11.70 | 6.22 | 3.40 | 1.81 | M | Cb | |
| 1540 | 3.066 | 7.866 | 0.283 | 0.175 | 19.960 | 47.40 | 24.78 | 5.90 | 3.08 | 11.60 | 6.06 | 3.50 | 1.83 | M | Cb | |
| 1541 | 2.986 | 7.493 | 0.255 | 0.177 | 19.330 | 44.90 | 23.64 | 5.50 | 2.90 | 11.20 | 5.90 | 3.40 | 1.79 | M | Cb | |
| 1624 | 3.116 | 7.893 | 0.266 | 0.184 | 18.610 | 45.20 | 23.80 | 5.60 | 2.95 | 11.70 | 6.16 | 3.30 | 1.74 | M | Cb | |
| 1630 | 3.022 | 7.721 | 0.277 | 0.183 | 17.760 | 45.40 | 24.33 | 5.20 | 2.79 | 11.40 | 6.11 | 3.60 | 1.93 | M | Cb | |
| 1713 | 2.996 | 7.775 | 0.297 | 0.184 | 18.760 | 45.70 | 24.00 | 5.90 | 3.10 | 11.30 | 5.94 | 3.30 | 1.73 | M | Cb | |
| 1825 | 2.950 | 8.044 | 0.364 | 0.170 | 19.210 | 47.90 | 25.60 | 5.80 | 3.10 | 12.40 | 6.63 | 3.40 | 1.82 | M | Cb | |
| 2001 | 2.982 | 7.620 | 0.277 | 0.181 | 18.830 | 45.60 | 24.07 | 5.60 | 2.96 | 11.30 | 5.96 | 3.10 | 1.64 | M | Cb | |
| 2008 | 2.949 | 8.031 | 0.361 | 0.169 | 18.980 | 44.30 | 23.86 | 5.50 | 2.96 | 11.90 | 6.41 | 3.30 | 1.78 | M | Cb | |
| 2031 | 2.966 | 8.059 | 0.359 | 0.180 | 19.000 | 47.00 | 24.75 | 6.30 | 3.32 | 12.40 | 6.53 | 3.20 | 1.68 | M | Cb | |
| 2038 | 3.128 | 7.919 | 0.266 | 0.178 | 18.550 | 41.60 | 22.18 | 5.90 | 3.15 | 11.80 | 6.29 | 3.30 | 1.76 | M | Cb | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2040 | 2.972 | 7.636 | 0.285 | 0.182 | 18.790 | 44.30 | 23.33 | 5.50 | 2.90 | 12.20 | 6.42 | 3.00 | 1.58 | M | Cb | |
| 2041 | 2.882 | 7.625 | 0.323 | 0.187 | 17.940 | 43.60 | 23.13 | 5.50 | 2.92 | 12.40 | 6.58 | 3.50 | 1.86 | M | Cb | |
| 17 | 2.864 | 7.207 | 0.258 | 0.186 | 16.970 | 41.90 | 22.69 | 5.40 | 2.92 | 12.40 | 6.71 | 3.60 | 1.95 | F | Cb | |
| 400 | 2.954 | 7.458 | 0.262 | 0.201 | 15.940 | 42.20 | 22.73 | 5.20 | 2.80 | 10.90 | 5.87 | 3.20 | 1.72 | F | Cb | |
| 515 | 2.861 | 7.261 | 0.269 | 0.179 | 16.800 | 41.20 | 22.67 | 5.60 | 3.08 | 11.50 | 6.33 | 3.50 | 1.93 | F | Cb | |
| 671 | 3.078 | 7.660 | 0.244 | 0.199 | 16.090 | 40.60 | 21.87 | 5.90 | 3.18 | 11.70 | 6.30 | 3.20 | 1.72 | F | Cb | |
| 672 | 2.941 | 7.691 | 0.308 | 0.203 | 16.270 | 40.50 | 21.59 | 6.00 | 3.20 | 11.90 | 6.34 | 3.50 | 1.87 | F | Cb | |
| 397 | 2.910 | 7.248 | 0.245 | 0.201 | 16.660 | 39.20 | 20.79 | 6.00 | 3.18 | 12.20 | 6.47 | 3.30 | 1.75 | F | Cb | |
| 799 | 2.883 | 7.185 | 0.246 | 0.197 | 17.240 | 40.40 | 21.32 | 5.50 | 2.90 | 11.60 | 6.12 | 3.10 | 1.64 | F | Cb | |
| 802 | 2.899 | 7.213 | 0.244 | 0.199 | 16.610 | 43.70 | 23.30 | 5.30 | 2.83 | 11.80 | 6.29 | 3.30 | 1.76 | F | Cb | |
| 806 | 2.891 | 7.100 | 0.228 | 0.178 | 17.670 | 42.50 | 23.01 | 5.60 | 3.03 | 11.20 | 6.06 | 3.50 | 1.90 | F | Cb | |
| 808 | 3.000 | 7.383 | 0.231 | 0.180 | 17.250 | 40.70 | 22.15 | 5.70 | 3.10 | 11.40 | 6.21 | 3.50 | 1.91 | F | Cb | |
| 809 | 2.971 | 7.268 | 0.223 | 0.181 | 18.100 | 39.50 | 21.11 | 5.50 | 2.94 | 11.50 | 6.15 | 3.20 | 1.71 | F | Cb | |
| 818 | 2.810 | 6.918 | 0.231 | 0.190 | 17.140 | 42.30 | 22.67 | 5.20 | 2.79 | 11.40 | 6.11 | 3.40 | 1.82 | F | Cb | |
| 815 | 2.985 | 7.748 | 0.298 | 0.191 | 16.770 | 42.10 | 22.68 | 5.20 | 2.80 | 11.90 | 6.41 | 3.20 | 1.72 | F | Cb | |
| 816 | 2.856 | 7.136 | 0.250 | 0.192 | 16.660 | 40.50 | 21.81 | 5.10 | 2.75 | 11.70 | 6.30 | 3.50 | 1.89 | F | Cb | |
| 1235 | 2.996 | 7.376 | 0.231 | 0.175 | 18.010 | 42.00 | 22.74 | 5.60 | 3.03 | 11.90 | 6.44 | 3.40 | 1.84 | F | Cb | |
| 1238 | 2.989 | 7.455 | 0.247 | 0.186 | 18.260 | 42.60 | 22.49 | 5.60 | 2.96 | 11.50 | 6.07 | 3.40 | 1.79 | F | Cb | |
| 1395 | 2.967 | 7.306 | 0.231 | 0.174 | 17.960 | 41.20 | 22.37 | 5.80 | 3.15 | 10.80 | 5.86 | 3.30 | 1.79 | F | Cb | |
| 1446 | 2.982 | 7.276 | 0.220 | 0.177 | 18.080 | 39.70 | 21.38 | 5.70 | 3.07 | 12.40 | 6.68 | 3.30 | 1.78 | F | Cb | |
| 1625 | 3.104 | 7.414 | 0.194 | 0.191 | 16.120 | 40.50 | 22.11 | 5.40 | 2.95 | 11.30 | 6.17 | 3.10 | 1.69 | F | Cb | |
| 1992 | 2.746 | 6.888 | 0.254 | 0.182 | 17.170 | 42.20 | 22.91 | 6.00 | 3.26 | 10.90 | 5.92 | 3.10 | 1.68 | F | Cb | |
| 2005 | 2.926 | 7.537 | 0.288 | 0.174 | 18.060 | 43.50 | 23.55 | 5.40 | 2.92 | 11.60 | 6.28 | 3.20 | 1.73 | F | Cb | |
| 2039 | 2.825 | 7.036 | 0.245 | 0.181 | 17.160 | 40.80 | 22.21 | 5.40 | 2.94 | 12.00 | 6.53 | 3.50 | 1.91 | F | Cb | |
| 2042 | 2.806 | 7.075 | 0.261 | 0.173 | 17.330 | 40.20 | 22.12 | 5.30 | 2.92 | 12.00 | 6.60 | 3.20 | 1.76 | F | Cb | |
| 2043 | 2.898 | 7.426 | 0.281 | 0.175 | 18.110 | 40.70 | 21.98 | 5.60 | 3.02 | 11.50 | 6.21 | 3.30 | 1.78 | F | Cb | |
| 2044 | 2.874 | 7.093 | 0.234 | 0.175 | 16.980 | 39.80 | 21.96 | 5.40 | 2.98 | 11.40 | 6.29 | 3.20 | 1.77 | F | Cb | |
| JXV | 2.938 | 7.335 | 0.248 | 0.207 | 17.670 | 44.40 | 22.89 | 6.20 | 3.20 | 11.60 | 5.98 | 3.30 | 1.70 | M | Ch | |
| 299 | 3.030 | 7.518 | 0.241 | 0.211 | 17.540 | 44.30 | 22.73 | 5.80 | 2.98 | 11.80 | 6.06 | 3.20 | 1.64 | M | Ch | |
| 349 | 2.989 | 7.473 | 0.250 | 0.192 | 17.820 | 44.60 | 23.48 | 5.90 | 3.11 | 12.10 | 6.37 | 3.50 | 1.84 | M | Ch | |
| 1727 | 3.007 | 7.518 | 0.250 | 0.198 | 17.670 | 42.20 | 22.06 | 5.50 | 2.88 | 12.30 | 6.43 | 3.50 | 1.83 | M | Ch | |
| 1729 | 3.062 | 7.681 | 0.254 | 0.196 | 18.460 | 47.20 | 24.39 | 5.90 | 3.05 | 12.10 | 6.25 | 3.30 | 1.71 | M | Ch | |
| 1754 | 2.851 | 7.335 | 0.286 | 0.180 | 18.380 | 43.50 | 23.19 | 6.20 | 3.31 | 11.80 | 6.29 | 3.50 | 1.87 | M | Ch | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1772 | 2.900 | 7.352 | 0.267 | 0.192 | 18.070 | 48.80 | 25.57 | 6.20 | 3.25 | 12.30 | 6.45 | 3.50 | 1.83 | M | Ch | |
| 1773 | 2.934 | 7.379 | 0.257 | 0.196 | 17.390 | 44.60 | 23.54 | 6.10 | 3.22 | 12.10 | 6.39 | 3.50 | 1.85 | M | Ch | |
| 1779 | 2.893 | 7.483 | 0.293 | 0.187 | 18.680 | 46.30 | 24.20 | 6.40 | 3.35 | 11.50 | 6.01 | 3.60 | 1.88 | M | Ch | |
| 1781 | 2.832 | 7.212 | 0.274 | 0.187 | 18.060 | 48.00 | 25.40 | 6.20 | 3.28 | 11.20 | 5.93 | 3.40 | 1.80 | M | Ch | |
| 1782 | 2.857 | 6.967 | 0.220 | 0.185 | 17.330 | 45.90 | 24.72 | 6.10 | 3.29 | 11.30 | 6.09 | 3.10 | 1.67 | M | Ch | |
| 1788 | 2.895 | 7.564 | 0.306 | 0.183 | 18.260 | 45.30 | 24.03 | 6.40 | 3.39 | 12.00 | 6.37 | 3.50 | 1.86 | M | Ch | |
| 1794 | 2.933 | 7.684 | 0.310 | 0.203 | 18.190 | 47.50 | 24.38 | 6.40 | 3.28 | 12.10 | 6.21 | 3.70 | 1.90 | M | Ch | |
| 1795 | 2.948 | 7.967 | 0.351 | 0.191 | 18.480 | 46.80 | 24.41 | 6.20 | 3.23 | 11.50 | 6.00 | 3.20 | 1.67 | M | Ch | |
| 2032 | 2.993 | 7.488 | 0.251 | 0.182 | 17.960 | 46.00 | 24.59 | 6.10 | 3.26 | 12.10 | 6.47 | 3.30 | 1.76 | M | Ch | |
| 2068 | 2.902 | 7.481 | 0.289 | 0.202 | 18.550 | 46.30 | 23.65 | 6.20 | 3.17 | 11.90 | 6.08 | 3.60 | 1.84 | M | Ch | |
| 2322 | 3.041 | 7.595 | 0.249 | 0.193 | 17.490 | 46.60 | 24.66 | 5.90 | 3.12 | 11.50 | 6.08 | 3.50 | 1.85 | M | Ch | |
| 2601 | 2.968 | 7.563 | 0.274 | 0.190 | 18.660 | 46.20 | 24.04 | 5.80 | 3.02 | 11.70 | 6.09 | 3.20 | 1.66 | M | Ch | |
| 2691 | 2.933 | 7.655 | 0.305 | 0.194 | 18.260 | 44.80 | 23.31 | 5.70 | 2.97 | 11.60 | 6.04 | 3.70 | 1.93 | M | Ch | |
| 2890 | 3.067 | 8.142 | 0.327 | 0.190 | 18.380 | 46.50 | 24.31 | 6.00 | 3.14 | 12.90 | 6.74 | 3.30 | 1.73 | M | Ch | |
| 3018 | 2.849 | 7.165 | 0.257 | 0.198 | 17.510 | 44.60 | 23.37 | 5.80 | 3.04 | 11.80 | 6.18 | 3.20 | 1.68 | M | Ch | |
| 7 | 2.944 | 7.359 | 0.250 | 0.211 | 16.790 | 36.30 | 18.89 | 5.90 | 3.07 | 12.10 | 6.30 | 3.20 | 1.66 | F | Ch | |
| 25 | 2.898 | 7.188 | 0.240 | 0.203 | 16.540 | 38.80 | 20.58 | 5.80 | 3.08 | 12.20 | 6.47 | 3.20 | 1.70 | F | Ch | |
| 26 | 2.822 | 7.068 | 0.252 | 0.195 | 16.430 | 40.00 | 21.54 | 6.30 | 3.39 | 11.50 | 6.19 | 3.50 | 1.89 | F | Ch | |
| 134 | 2.944 | 6.960 | 0.182 | 0.193 | 15.820 | 41.50 | 22.71 | 5.80 | 3.17 | 11.40 | 6.24 | 3.50 | 1.92 | F | Ch | |
| BXX | 3.020 | 7.142 | 0.182 | 0.191 | 15.710 | 39.30 | 21.63 | 6.00 | 3.30 | 11.60 | 6.38 | 2.90 | 1.60 | F | Ch | |
| 1644 | 2.740 | 7.113 | 0.298 | 0.199 | 16.670 | 41.70 | 22.17 | 5.40 | 2.87 | 11.20 | 5.96 | 2.90 | 1.54 | F | Ch | |
| 1722 | 2.934 | 7.024 | 0.197 | 0.199 | 16.060 | 44.00 | 23.70 | 5.30 | 2.85 | 11.40 | 6.14 | 3.20 | 1.72 | F | Ch | |
| 1724 | 2.925 | 7.043 | 0.204 | 0.199 | 15.550 | 41.40 | 22.54 | 5.50 | 2.99 | 12.30 | 6.70 | 3.30 | 1.80 | F | Ch | |
| 1747 | 2.882 | 7.214 | 0.251 | 0.195 | 15.930 | 40.30 | 21.94 | 6.10 | 3.32 | 11.50 | 6.26 | 3.30 | 1.80 | F | Ch | |
| 1752 | 2.691 | 6.920 | 0.286 | 0.189 | 16.170 | 42.10 | 23.04 | 5.80 | 3.17 | 11.30 | 6.18 | 3.60 | 1.97 | F | Ch | |
| 1757 | 2.908 | 7.486 | 0.287 | 0.188 | 16.590 | 42.50 | 23.07 | 6.40 | 3.47 | 11.30 | 6.13 | 3.60 | 1.95 | F | Ch | |
| 1756 | 2.899 | 7.376 | 0.272 | 0.182 | 16.370 | 42.90 | 23.67 | 5.90 | 3.26 | 11.10 | 6.13 | 3.60 | 1.99 | F | Ch | |
| 1765 | 2.734 | 7.085 | 0.296 | 0.179 | 16.780 | 43.80 | 24.10 | 5.60 | 3.08 | 11.50 | 6.33 | 3.50 | 1.93 | F | Ch | |
| 1786 | 2.816 | 6.999 | 0.243 | 0.198 | 16.030 | 41.00 | 22.14 | 6.30 | 3.40 | 10.50 | 5.67 | 3.30 | 1.78 | F | Ch | |
| 1797 | 2.946 | 7.235 | 0.228 | 0.194 | 15.840 | 41.80 | 22.82 | 6.20 | 3.38 | 12.20 | 6.66 | 3.60 | 1.96 | F | Ch | |
| 1798 | 2.873 | 7.239 | 0.260 | 0.198 | 16.380 | 40.40 | 21.65 | 6.00 | 3.21 | 11.40 | 6.11 | 3.50 | 1.88 | F | Ch | |
| 1800 | 2.891 | 7.317 | 0.265 | 0.190 | 16.290 | 42.30 | 23.03 | 5.60 | 3.05 | 11.00 | 5.99 | 3.30 | 1.80 | F | Ch | |
| 2033 | 2.859 | 7.018 | 0.227 | 0.200 | 15.270 | 44.80 | 24.52 | 6.00 | 3.28 | 10.70 | 5.86 | 3.10 | 1.70 | F | Ch | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2034 | 2.909 | 7.123 | 0.224 | 0.190 | 16.560 | 42.00 | 22.86 | 6.20 | 3.37 | 11.90 | 6.48 | 3.40 | 1.85 | F | Ch | |
| 2064 | 2.817 | 6.943 | 0.232 | 0.202 | 15.690 | 41.70 | 22.52 | 6.10 | 3.29 | 11.50 | 6.21 | 3.50 | 1.89 | F | Ch | |
| 2067 | 2.840 | 7.016 | 0.235 | 0.196 | 15.780 | 41.50 | 22.59 | 5.60 | 3.05 | 11.20 | 6.10 | 3.40 | 1.85 | F | Ch | |
| 3017 | 2.804 | 7.005 | 0.249 | 0.200 | 16.490 | 42.70 | 22.76 | 5.60 | 2.99 | 11.60 | 6.18 | 3.10 | 1.65 | F | Ch | |
| 3071 | 2.881 | 7.210 | 0.251 | 0.183 | 16.660 | | | | | | | | | F | Ch | |

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## Supplementary scripts

Supplementary scripts will be available in the Github.

**Script S1. R Script for Fst and AMOVA calculations**

**Script S2. R Script for niche overlapping**

**Script S3. R Script for cluster analysis of morphological variables**