**Supplementary material I:** List of analyzed specimens of *Anolis* species

|  |  |  |
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| **Species** | **Voucher** | **Ecomorph** |
| *allisoni* | MCZA 33074 | Trunk-crown |
| *allisoni* | MCZZ 26996 | Trunk-crown |
| *angusticeps* | MCZA 29330 | Twig |
| *armouri* | MCZA 33116 | Trunk-ground |
| *armouri* | MCZA 33125 | Trunk-ground |
| *brunneus* | JASIL 2843 | Trunk-crown |
| *brunneus* | JASIL 2848 | Trunk-crown |
| *brunneus* | JASIL 2850 | Trunk-crown |
| *carolinensis* | JASIL 2807 | Trunk-crown |
| *carolinensis* | JASIL 2808 | Trunk-crown |
| *carolinensis* | JASIL 2809 | Trunk-crown |
| *carolinensis* | JASIL 2810 | Trunk-crown |
| *carolinensis* | JASIL 2812 | Trunk-crown |
| *coelestinus* | JASIL 2672 | Trunk-crown |
| *coelestinus* | JASIL 2673 | Trunk-crown |
| *conspersus* | MCZA 33075 | Trunk-crown |
| *conspersus* | MCZA 33076 | Trunk-crown |
| *conspersus* | MCZA 33077 | Trunk-crown |
| *conspersus* | MCZZ 27000 | Trunk-crown |
| *cooki* | MCZR 122188 | Trunk-ground |
| *cristatellus* | MCZA 33111 | Trunk-ground |
| *cristatellus* | MCZA 33112 | Trunk-ground |
| *cristatellus* | MCZA 33120 | Trunk-ground |
| *cristatellus* | MCZA 33121 | Trunk-ground |
| *cristatellus* | MCZA 33122 | Trunk-ground |
| *cristatellus* | JASIL 2800 | Trunk-ground |
| *cristatellus* | MCZR 122197 | Trunk-ground |
| *cybotes* | MCZA 33050 | Trunk-ground |
| *cybotes* | MCZA 33052 | Trunk-ground |
| *cybotes* | MCZA 33053 | Trunk-ground |
| *cybotes* | MCZA 33054 | Trunk-ground |
| *cybotes* | MCZA 33055 | Trunk-ground |
| *cybotes* | MCZA 33057 | Trunk-ground |
| *cybotes* | MCZA 33059 | Trunk-ground |
| *cybotes* | MCZA 33060 | Trunk-ground |
| *cybotes* | MCZA 33061 | Trunk-ground |
| *cybotes* | MCZA 33062 | Trunk-ground |
| *cybotes* | MCZA 33063 | Trunk-ground |
| *cybotes* | MCZA 33065 | Trunk-ground |
| *cybotes* | MCZA 33066 | Trunk-ground |
| *cybotes* | MCZA 33067 | Trunk-ground |
| *cybotes* | MCZA 33068 | Trunk-ground |
| *cybotes* | MCZA 33069 | Trunk-ground |
| *cybotes* | MCZA 33070 | Trunk-ground |
| *cybotes* | MCZA 33071 | Trunk-ground |
| *cybotes* | MCZA 33072 | Trunk-ground |
| *cybotes* | MCZA 33078 | Trunk-ground |
| *cybotes* | MCZA 33080 | Trunk-ground |
| *cybotes* | MCZA 33081 | Trunk-ground |
| *cybotes* | MCZA 33082 | Trunk-ground |
| *cybotes* | MCZA 33083 | Trunk-ground |
| *cybotes* | MCZA 33084 | Trunk-ground |
| *cybotes* | MCZA 33085 | Trunk-ground |
| *cybotes* | MCZA 33086 | Trunk-ground |
| *distichus* | JASIL 2680 | Trunk |
| *distichus* | JASIL 2681 | Trunk |
| *distichus* | JASIL 2683 | Trunk |
| *evermanni* | MCZA 10526 | Trunk-crown |
| *evermanni* | MCZR 137728 | Trunk-crown |
| *evermanni* | MCZR 137730 | Trunk-crown |
| *garmani* | MCZR 51880 | Crown-giant |
| *garmani* | MCZR 73381 | Crown-giant |
| *garmani* | MCZR 73378 | Crown-giant |
| *grahami* | MCZA 24502 | Trunk-crown |
| *grahami* | MCZA 24510 | Trunk-crown |
| *grahami* | MCZA 24511 | Trunk-crown |
| *grahami* | MCZA 24512 | Trunk-crown |
| *grahami* | MCZA 24554 | Trunk-crown |
| *grahami* | MCZA 24559 | Trunk-crown |
| *grahami* | MCZA 24564 | Trunk-crown |
| *grahami* | MCZA 24565 | Trunk-crown |
| *grahami* | MCZA 24590 | Trunk-crown |
| *grahami* | MCZA 24597 | Trunk-crown |
| *grahami* | MCZA 24599 | Trunk-crown |
| *grahami* | MCZA 24600 | Trunk-crown |
| *grahami* | MCZA 24601 | Trunk-crown |
| *grahami* | MCZA 24603 | Trunk-crown |
| *grahami* | MCZA 24604 | Trunk-crown |
| *grahami* | MCZA 24605 | Trunk-crown |
| *grahami* | MCZA 24607 | Trunk-crown |
| *grahami* | MCZA 24608 | Trunk-crown |
| *grahami* | MCZA 24609 | Trunk-crown |
| *grahami* | MCZA 24614 | Trunk-crown |
| *grahami* | MCZA 24617 | Trunk-crown |
| *grahami* | MCZA 24621 | Trunk-crown |
| *grahami* | MCZA 24622 | Trunk-crown |
| *grahami* | MCZA 24624 | Trunk-crown |
| *grahami* | MCZA 24629 | Trunk-crown |
| *grahami* | MCZA 24630 | Trunk-crown |
| *grahami* | MCZA 24632 | Trunk-crown |
| *grahami* | MCZA 24633 | Trunk-crown |
| *grahami* | MCZA 24634 | Trunk-crown |
| *grahami* | MCZA 24675 | Trunk-crown |
| *gundlachi* | MCZR 183186 | Trunk-ground |
| *gundlachi* | MCZR 183187 | Trunk-ground |
| *jubar* | MCZA 29334 | Trunk-ground |
| *jubar* | MCZA 29335 | Trunk-ground |
| *jubar* | MCZA 29337 | Trunk-ground |
| *jubar* | MCZA 29338 | Trunk-ground |
| *jubar* | MCZA 29339 | Trunk-ground |
| *jubar* | MCZA 29340 | Trunk-ground |
| *jubar* | MCZA 29341 | Trunk-ground |
| *krugi* | MCZR 150650 | Grass-bush |
| *lineatopus* | MCZR 73179 | Trunk-ground |
| *opalinus* | MCZR 177919 | Trunk-crown |
| *opalinus* | MCZA 24568 | Trunk-crown |
| *opalinus* | MCZA 24587 | Trunk-crown |
| *ophiolepis* | MCZA 29349 | Grass-bush |
| *ophiolepis* | MCZA 29432 | Grass-bush |
| *poncensis* | MCZR 158234 | Grass-bush |
| *poncensis* | MCZR 158236 | Grass-bush |
| *porcatus* | MCZA 29351 | Trunk-crown |
| *porcatus* | MCZA 29352 | Trunk-crown |
| *porcatus* | MCZA 29353 | Trunk-crown |
| *porcatus* | MCZA 29354 | Trunk-crown |
| *porcatus* | MCZA 29355 | Trunk-crown |
| *porcatus* | MCZA 29356 | Trunk-crown |
| *porcatus* | MCZA 29357 | Trunk-crown |
| *porcatus* | MCZA 29358 | Trunk-crown |
| *porcatus* | MCZA 29359 | Trunk-crown |
| *pulchellus* | MCZR 150901 | Grass-bush |
| *pulchellus* | MCZR 151352 | Grass-bush |
| *sagrei* | MCZZ 26998 | Trunk-ground |
| *sagrei* | MCZA 33107 | Trunk-ground |
| *sagrei* | MCZA 33108 | Trunk-ground |
| *sagrei* | MCZA 33109 | Trunk-ground |
| *sagrei* | MCZA 33110 | Trunk-ground |
| *sagrei* | MCZA 33123 | Trunk-ground |
| *stratulus* | MCZR 138168 | Trunk-crown |
| *stratulus* | MCZR 138204 | Trunk-crown |
| *valenciennni* | MCZR 82004 | twig |

**Supplementary material II**: Descriptive statistics for log transformed hemipenial and non-genital traits: mean and standard deviation (Std Dev).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Dewlap** | | **Thigh** | | **Shank** | | **Hemipenis length** | | **Hemipenis width at lobes** | | | **Hemipenis width at body** | |
| **Mean** | | 1.59 | | 1.13 | | 0.93 | | 0.77 | | 0.57 | 0.33 | |
| **Std Dev** | | 0.10 | | 0.09 | | 0.08 | | 0.13 | | 0.15 | 0.12 | |