Supporting Information for

Convergent patterns of adaptive radiation between island and mainland *Anolis* lizards

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Material and Methods

Species substitutions in the phylogeny

Because our morphometric dataset included species not present in the MCC or the time-calibrated phylogenies from Poe et al. (2017), we incorporated them into the tree by substituting them in place of tips of their closest relatives, from which they have recently been split. Three species in our morphometric dataset were missing from the MCC phylogeny (*A. hispaniolae*, *A. mccraniei*, *A. osa*) and were substituted in place of *A. cybotes*, *A. tropidonotus*, and *A. polylepis*, respectively (Köhler *et al*., 2010; 2016; 2019), although the genetic data used for *A. cybotes* in Poe et al. (2017) likely are from the more recently described *A. hispaniolae* based on locality (Köhler *et al*., 2019). Moreover, 21 species we sampled for morphology were not included in the time-calibrated tree. Three of these were the same three species missing from the MCC tree so we added them into the time-calibrated tree by replacing the same tips of their closest relatives. We also added *A. ruibali* into the time-calibrated tree by replacing the tip for *A. argillaceus* (Poe *et al*., 2017).The remaining 17 species did not have any close relatives in the time-calibrated tree and were omitted from analyses using this particular tree. Most of these species were previously unclassified Caribbean species or island endemic *Draconura* species; thus their exclusion is unlikely to influence our results substantially.

Results

DFA misclassifications

In the DFA analysis with only the Caribbean ecomorphs, both resubstitution and cross-validation misclassified the grass-bush species *A. krugi* as a trunk-ground species. With cross-validation, three additional species were misclassified: the trunk-crown species *A. stratulus* was misclassified as a trunk species, the trunk-ground species *A. bremeri* as a trunk-crown species, and the trunk species *A. loysianus* was also misclassified as a trunk-crown species. An examination of the morphospace showed that many of these species overlapped with the space occupied by the ecomorph to which they were incorrectly assigned on at least one of the first five pPC axes. Similarly, in the DFA with the inclusion of the ground ecomorph, the Caribbean grass-bush anole *A. krugi* was misclassified as a trunk-ground species by both resubstitution and cross-validation. With cross-validation, the trunk-crown species *A. stratulus* was misclassified as a trunk species, the trunk species *A. loysianus* as a trunk-crown species, and the putative ground species *A. barbouri* (Caribbean) and *A. uniformis* (mainland) were misclassified as a grass-bush and trunk-ground species, respectively.

Table S1. List of the 205 *Anolis* species used in this study and their *a priori* ecomorph assignments (where relevant). We considered a few previously classified trunk-ground species with strong saxicolous tendencies (*A. armouri*, *A. longitibialis*, *A. shrevei*, and *A. strahmi*) to be unclassified to assess their similarities to the mainland ground and rock anoles (Henderson & Powell, 2009; Muñoz & Losos, 2018). The previously classified trunk-crown species *A. isolepis* (Mahler *et al.*, 2013) was considered an unclassified species given its nearly exclusive tendency to perch on leaves, which is atypical for trunk-crown anoles (Henderson & Powell, 2009; Losos, 2009). Lastly, we considered *A. paternus* an unclassified species (previously assigned to the twig ecomorph), due to a general lack of ecological data (Henderson & Powell, 2009). Although initially unclassified, *A. barbouri* and the following *Draconura* species were subsequently classified *a priori* as members of the newly proposed ground ecomorph: *A. bombiceps*, *A. brasiliensis*, *A. chrysolepis*, *A. humilis*, *A. planiceps, A. quaggulus*, *A. scypheus*, *A. tandai*, *A. trachyderma*, *A. uniformis*. Other *Draconura* species and unclassified Caribbean species were classified *a posteriori* if they satisfied specified criteria (as described in the Methods).

Crown-Giant

Anolis baleatus
Anolis baracoae
Anolis barahonae
Anolis cuvieri
Anolis equestris
Anolis garmani
Anolis luteogularis
Anolis noblei
Anolis ricordii
Anolis smallwoodi

Grass-Bush

Anolis alfaroi
Anolis alumina
Anolis alutaceus
Anolis bahorucoensis
Anolis cupeyalensis
Anolis dolichocephalus
Anolis hendersoni
Anolis juangundlachi
Anolis koopmani
Anolis krugi
Anolis olssoni
Anolis ophiolepis
Anolis poncensis
Anolis pulchellus
Anolis rejectus
Anolis semilineatus
Anolis vanidicus

Trunk

Anolis brevirostris
Anolis caudalis
Anolis distichus
Anolis favillarum
Anolis loysianus
Anolis marron
Anolis vinosus
Anolis websteri

Trunk-Crown

Anolis aliniger
Anolis allisoni
Anolis chlorocyanus
Anolis coelestinus
Anolis evermanni
Anolis grahami
Anolis longiceps
Anolis maynardi
Anolis opalinus
Anolis porcatus
Anolis stratulus

Trunk-Ground

Anolis ahli
Anolis allogus
Anolis bremeri
Anolis cooki
Anolis cristatellus
Anolis gundlachi
Anolis hispaniolae
Anolis homolechis
Anolis jubar
Anolis lineatopus
Anolis marcanoi
Anolis mestrei
Anolis rubribarbus
Anolis sagrei
Anolis saxatilis

Twig

Anolis alayoni
Anolis angusticeps
Anolis darlingtoni
Anolis garridoi
Anolis insolitus
Anolis occultus
Anolis oligaspis
Anolis placidus
Anolis sheplani
Anolis valencienni

Unclassified Caribbean

Anolis altavelensis
Anolis argenteolus
Anolis armouri
Anolis barbatus
Anolis barbouri
Anolis bartschi
Anolis brunneus
Anolis chamaeleonides
Anolis christophei
Anolis conspersus
Anolis desechensis
Anolis ernestwilliamsi
Anolis etheridgei
Anolis eugenegrahami
Anolis guamuhaya
Anolis imias
Anolis isolepis
Anolis litoralis
Anolis longitibialis
Anolis lucius
Anolis monensis
Anolis monticola
Anolis paternus
Anolis pogus

Anolis porcus
Anolis pumilus
Anolis reconditus
Anolis ruibali
Anolis rupinae
Anolis schwartzi
Anolis scriptus
Anolis shrevei
Anolis strahmi
Anolis vermiculatus
Anolis wattsi

Mainland *Draconura*

Anolis amplisquamosus
Anolis apletophallus
Anolis aquaticus
Anolis auratus
Anolis barkeri
Anolis beckeri
Anolis benedikti
Anolis biporcatus
Anolis bombiceps
Anolis boulengerianus
Anolis brasiliensis
Anolis campbelli
Anolis capito
Anolis charlesmyersi
Anolis chrysolepis
Anolis cobanensis
Anolis cristifer
Anolis cryptolimifrons
Anolis cupreus
Anolis cusuco
Anolis dollfusianus
Anolis dunni
Anolis fuscoauratus
Anolis gadovii
Anolis gaigei
Anolis gracilipes
Anolis granuliceps
Anolis heteropholidotus
Anolis hobartsmithi
Anolis humilis
Anolis johnmeyeri
Anolis kemptoni
Anolis kreutzi
Anolis laeviventris
Anolis lemurinus
Anolis liogaster
Anolis lionotus
Anolis loveridgei
Anolis lynchi
Anolis lyra
Anolis macrinii
Anolis macrolepis
Anolis maculiventris
Anolis magnaphallus
Anolis mariarum
Anolis matudai
Anolis mccraniei
Anolis megapholidotus
Anolis meridionalis
Anolis microlepidotus
Anolis milleri
Anolis morazani
Anolis muralla
Anolis nebulosus
Anolis notopholis
Anolis omiltemanus
Anolis onca
Anolis ortonii
Anolis osa
Anolis oxylophus
Anolis parvauritus
Anolis pentaprion
Anolis petersii
Anolis pijolense
Anolis planiceps
Anolis poecilopus
Anolis purpurgularis
Anolis quaggulus
Anolis quercorum
Anolis rivalis
Anolis rodriguezii
Anolis rubribarbaris
Anolis salvini
Anolis scypheus
Anolis serranoi
Anolis sminthus
Anolis subocularis
Anolis tandai
Anolis taylori
Anolis tolimensis
Anolis trachyderma
Anolis tropidolepis
Anolis uniformis
Anolis unilobatus
Anolis vittigerus
Anolis wampuensis
Anolis wellbornae
Anolis wermuthi
Anolis woodi
Anolis yoroensis
Anolis zeus

Island *Draconura*

Anolis bicaorum
Anolis concolor
Anolis lineatus
Anolis medemi
Anolis pinchoti
Anolis roatanensis
Anolis townsendi
Anolis villai

Table S2. Trait loadings for the first five axes of the phylogenetic principal component analysis retained for subsequent analyses.

Trait	PC1	PC2	PC3	PC4	PC5
Snout-vent Length	-0.001	1.000	0.000	0.000	0.000
Tail Length	-0.612	0.000	0.165	0.767	0.042
Head Length	-0.141	0.000	-0.356	0.075	-0.804
Snout Length	0.027	0.000	-0.342	0.142	-0.805
Head Width	-0.355	0.000	-0.510	-0.030	-0.475
Humerus Length	-0.684	-0.001	0.130	-0.245	0.247
Radius Length	-0.777	-0.001	-0.026	-0.356	-0.005
Hand Length	-0.728	-0.001	-0.119	-0.301	-0.053
Femur Length	-0.847	-0.001	0.150	-0.260	-0.011
Tibia Length	-0.880	-0.001	0.238	-0.130	-0.074
Foot Length	-0.850	-0.001	0.157	-0.045	-0.127
Fingerpad Width	-0.210	0.000	-0.878	-0.069	0.097
Toepad Width	-0.208	0.000	-0.895	0.157	0.175
Standard deviation	1.40	1.33	1.10	0.83	0.59
Proportion of Variance	28.2%	25.5%	17.3%	9.8%	5.0%
Cumulative Proportion	28.2%	53.8%	71.1%	80.9%	85.9%

Table S3. Summary of the Euclidean distances to the ecomorph centroid and other ecomorph members for 71 Caribbean ecomorph species and 11 putative ground anole species. Distances were calculated from the first five axes of the phylogenetic principal component analysis.

Ecomorph	***n***	**Max centroid distance**	**Max mean pairwise distance**	**Max nearest neighbor distance**
Crown-Giant	10	0.402	0.519	0.324
Grass-Bush	17	0.578	0.658	0.329
Trunk	8	0.398	0.493	0.299
Trunk-Crown	11	0.367	0.438	0.273
Trunk-Ground	15	0.387	0.467	0.357
Twig	10	0.657	0.811	0.439
Ground	11	0.444	0.559	0.354

Table S4. DFA posterior probabilities for ecomorph classifications of 134 *Draconura* and previously unclassified Caribbean species made with only the six Caribbean ecomorphs. C = previously unclassified Caribbean species, M = mainland *Draconura* species, and I = island *Draconura* species.

Species	Region	Crown-Giant	Grass-Bush	Trunk	Trunk-Crown	Trunk-Ground	Twig
A. altavelensis	C	-	-	0.999	0.001	-	-
A. amplisquamosus	M	-	0.942	-	0.056	0.002	-
A. apletophallus	M	-	0.001	-	-	0.999	-
A. aquaticus	M	-	-	-	-	1.000	-
A. argenteolus	C	-	-	0.784	0.001	0.215	-
A. armouri	C	-	-	-	0.038	0.962	-
A. auratus	M	-	1.000	-	-	-	-
A. barbatus	C	0.441	-	-	-	-	0.559
A. barbouri	C	-	0.997	-	-	0.003	-
A. barkeri	M	-	-	-	-	1.000	-
A. bartschi	C	0.005	-	0.116	0.209	0.671	-
A. beckeri	M	-	-	0.497	0.392	-	0.111
A. benedikti	M	-	-	-	-	1.000	-
A. bicaorum	I	-	-	-	-	1.000	-
A. biporcatus	M	0.626	-	-	0.003	0.371	-
A. bombiceps	M	-	-	-	-	1.000	-
A. boulengerianus	M	-	-	0.024	-	0.976	-
A. brasiliensis	M	-	-	-	-	1.000	-
A. brunneus	C	-	-	-	1.000	-	-
A. campbelli	M	-	0.004	-	-	0.996	-
A. capito	M	-	-	-	-	1.000	-
A. chamaeleonides	C	1.000	-	-	-	-	-
A. charlesmyersi	M	-	-	0.001	0.034	-	0.965
A. christophei	C	-	-	0.167	0.180	0.653	-
A. chrysolepis	M	-	-	-	-	1.000	-
A. cobanensis	M	-	0.300	-	-	0.700	-
A. concolor	I	-	-	-	0.001	0.999	-
A. conspersus	C	-	-	0.001	0.005	0.993	-
A. cristifer	M	0.002	-	-	0.001	-	0.998
A. cryptolimifrons	M	-	0.013	-	-	0.987	-
A. cupreus	M	-	0.055	-	-	0.945	-
A. cusuco	M	-	-	0.014	0.986	-	-
A. desechensis	C	-	-	-	0.080	0.920	-
A. dollfusianus	M	-	0.199	-	-	0.800	-

A. dunni	M	-	-	-	0.004	0.996	-
A. ernestwilliamsi	C	-	-	-	-	0.999	-
A. etheridgei	C	-	-	-	-	1.000	-
A. eugenegrahami	C	-	-	-	-	1.000	-
A. fuscoauratus	M	-	0.993	-	-	0.007	-
A. gadovii	M	-	-	-	-	1.000	-
A. gaigei	M	-	0.281	-	-	0.719	-
A. gracilipes	M	-	-	-	-	1.000	-
A. granuliceps	M	-	0.001	-	-	0.999	-
A. guamuhaya	C	-	-	-	-	-	1.000
A. heteropholidotus	M	-	0.002	0.003	0.005	0.990	-
A. hobartsmithi	M	-	0.833	-	-	0.167	-
A. humilis	M	-	-	0.004	-	0.996	-
A. imias	C	-	-	0.016	-	0.984	-
A. isolepis	C	-	-	-	-	-	1.000
A. johnmeyeri	M	-	-	-	0.016	0.984	-
A. kemptoni	M	-	0.001	-	0.997	0.002	-
A. kreutzi	M	-	-	0.163	0.507	0.330	-
A. laeviventris	M	-	-	-	0.999	0.001	-
A. lemurinus	M	-	0.001	-	-	0.999	-
A. lineatus	I	0.003	-	-	-	0.997	-
A. liogaster	M	-	-	-	0.006	0.994	-
A. lionotus	M	-	-	-	-	1.000	-
A. litoralis	C	-	-	-	0.999	0.001	-
A. longitibialis	C	-	-	0.001	-	0.999	-
A. loveridgei	M	0.783	-	-	-	0.217	-
A. lucius	C	-	-	0.151	0.056	0.794	-
A. lynchi	M	-	-	-	-	1.000	-
A. lyra	M	-	0.002	-	-	0.998	-
A. macrinii	M	0.056	-	-	0.364	0.579	-
A. macrolepis	M	-	-	-	-	1.000	-
A. maculiventris	M	-	0.001	-	-	0.999	-
A. magnaphallus	M	-	-	-	-	1.000	-
A. mariarum	M	-	0.002	-	0.042	0.957	-
A. matudai	M	-	-	-	-	1.000	-
A. mccraniei	M	-	-	-	-	1.000	-
A. medemi	I	-	-	-	-	0.999	-
A. megapholidotus	M	-	0.001	-	-	0.999	-
A. meridionalis	M	-	0.996	-	-	0.004	-
A. microlepidotus	M	-	0.001	-	-	0.999	-

A. milleri	M	-	-	-	-	1.000	-
A. monensis	C	-	-	0.202	0.014	0.785	-
A. monticola	C	-	1.000	-	-	-	-
A. morazani	M	-	1.000	-	-	-	-
A. muralla	M	-	0.994	-	0.005	0.001	-
A. nebulosus	M	-	-	0.050	0.003	0.948	-
A. notopholis	M	-	0.173	-	-	0.827	-
A. omiltemanus	M	-	-	-	1.000	-	-
A. onca	M	-	-	-	-	1.000	-
A. ortonii	M	-	-	0.515	0.485	-	-
A. osa	M	-	-	-	-	1.000	-
A. oxylophus	M	-	-	-	-	1.000	-
A. parvauritus	M	0.001	-	-	0.015	0.984	-
A. paternus	C	-	-	-	1.000	-	-
A. pentaprion	M	-	-	0.176	0.689	-	0.134
A. petersii	M	0.169	-	-	0.804	0.026	-
A. pijolense	M	-	-	-	-	1.000	-
A. pinchoti	I	-	-	-	-	1.000	-
A. planiceps	M	-	-	-	-	1.000	-
A. poecilopus	M	-	-	-	-	1.000	-
A. pogus	C	-	1.000	-	-	-	-
A. porcus	C	1.000	-	-	-	-	-
A. pumilus	C	-	-	0.977	0.023	-	-
A. purpurgularis	M	-	-	-	0.012	0.987	-
A. quaggulus	M	-	-	-	-	1.000	-
A. quercorum	M	-	-	0.003	0.465	0.531	-
A. reconditus	C	-	-	-	-	1.000	-
A. rivalis	M	-	-	-	-	1.000	-
A. roatanensis	M	-	-	-	-	1.000	-
A. rodriguezii	M	-	0.782	-	-	0.218	-
A. rubribarbaris	M	-	0.020	-	0.980	-	-
A. ruibali	C	-	-	0.001	0.998	0.001	-
A. rupinae	C	-	0.752	-	-	0.248	-
A. salvini	M	-	-	-	0.347	-	0.653
A. schwartzi	C	-	0.964	-	0.004	0.032	-
A. scriptus	C	-	-	-	-	1.000	-
A. scypheus	M	-	-	-	-	1.000	-
A. serranoi	M	-	0.219	-	-	0.781	-
A. shrevei	C	-	0.001	-	-	0.998	-
A. sminthus	M	-	0.890	-	0.018	0.092	-

A. strahmi	C	-	-	-	-	1.000	-
A. subocularis	M	-	0.001	-	-	0.999	-
A. tandai	M	-	-	-	-	1.000	-
A. taylori	M	-	-	-	-	0.999	-
A. tolimensis	M	-	0.010	-	0.072	0.918	-
A. townsendi	I	-	0.001	-	0.001	0.998	-
A. trachyderma	M	-	-	-	-	1.000	-
A. tropidolepis	M	-	0.021	-	-	0.979	-
A. uniformis	M	-	-	-	-	1.000	-
A. unilobatus	M	-	0.904	0.005	0.040	0.051	-
A. vermiculatus	C	0.997	-	-	-	0.003	-
A. villai	I	-	-	0.001	-	0.998	-
A. vittigerus	M	-	0.501	-	-	0.499	-
A. wampuensis	M	-	-	-	-	1.000	-
A. wattsi	C	-	0.001	-	0.003	0.996	-
A. wellbornae	M	-	0.225	-	0.028	0.747	-
A. wermuthi	M	-	0.991	-	0.009	-	-
A. woodi	M	-	-	-	-	1.000	-
A. yoroensis	M	-	0.003	-	-	0.997	-
A. zeus	M	-	0.656	-	-	0.344	-

Table S5. List of 134 *Draconura* and previously unclassified Caribbean species (including the *a priori* ground ecomorph species) and the ecomorphs for which they satisfied the centroid distance criterion (i.e., the distance to an ecomorph centroid was less than that of the furthest *a priori* member of that ecomorph). Values are the Euclidean distances to the centroid of each ecomorph for which a given species satisfied the criterion in question. Abbreviations as in Table S4.

Species	**Region**	**Crown-Giant**	**Ground**	**Grass-Bush**	**Trunk**	**Trunk-Crown**	**Trunk-Ground**	**Twig**
A. altavelensis	C	-	-	-	0.250	-	-	-
A. amplisquamosus	M	-	-	0.447	-	-	-	-
A. apletophallus	M	-	0.311	0.512	-	-	0.365	-
A. aquaticus	M	-	0.355	-	-	-	-	-
A. argenteolus	C	-	0.409	-	0.368	-	0.355	-
A. armouri	C	-	-	-	-	-	-	-
A. auratus	M	-	-	0.387	-	-	-	-
A. barbatus	C	-	-	-	-	-	-	-
A. barbouri	C	-	0.405	0.329	-	-	-	-
A. barkeri	M	-	0.433	-	-	-	0.347	-
A. bartschi	C	-	-	-	-	-	-	0.512
A. beckeri	M	-	-	-	-	-	-	-
A. benedikti	M	-	0.438	-	0.382	-	0.277	-
A. bicaorum	I	-	0.356	-	-	-	0.310	-
A. biporcatus	M	-	-	-	-	-	-	-
A. bombiceps	M	-	*0.409*	-	-	-	-	-
A. boulengerianus	M	-	0.331	-	-	-	0.260	-
A. brasiliensis	M	-	*0.311*	-	-	-	-	-
A. brunneus	C	-	-	-	-	-	-	-
A. campbelli	M	-	0.437	-	-	-	-	0.504
A. capito	M	-	-	-	-	-	-	-
A. chamaeleonides	C	-	-	-	-	-	-	-
A. charlesmyersi	M	-	-	-	-	-	-	-
A. christophei	C	-	0.274	-	-	-	0.260	-
A. chrysolepis	M	-	*0.305*	-	-	-	-	0.652
A. cobanensis	M	-	0.426	-	-	-	-	-
A. concolor	I	-	-	-	-	-	0.235	-
A. conspersus	C	-	-	-	-	0.395	0.187	-
A. cristifer	M	-	-	-	-	-	-	-
A. cryptolimifrons	M	-	0.313	0.418	-	-	-	-
A. cupreus	M	-	0.390	0.402	-	-	-	-
A. cusuco	M	-	-	-	-	-	-	-

A. desechensis	C	-	-	-	-	-	0.361	-
A. dollfusianus	M	-	0.404	0.465	-	-	-	-
A. dunni	M	-	-	-	-	-	0.226	-
A. ernestwilliamsi	C	-	-	-	-	-	0.352	-
A. etheridgei	C	-	0.416	-	-	-	-	-
A. eugenegrahami	C	-	-	-	-	-	-	-
A. fuscoauratus	M	-	-	0.369	-	-	-	-
A. gadovii	M	-	0.440	-	-	-	0.296	-
A. gaigei	M	-	0.227	0.485	-	-	-	-
A. gracilipes	M	-	0.275	-	-	-	-	-
A. granuliceps	M	-	0.291	-	-	-	-	-
A. guamuhaya	C	-	-	-	-	-	-	0.489
A. heteropholidotus	M	-	-	0.509	-	-	-	-
A. hobartsmithi	M	-	0.402	-	-	-	0.342	-
A. humilis	M	-	0.444	-	-	-	-	-
A. imias	C	-	-	-	-	-	0.361	-
A. isolepis	C	-	-	-	-	-	-	-
A. johnmeyeri	M	-	-	-	-	-	0.161	-
A. kemptoni	M	-	-	0.518	-	0.346	-	-
A. kreutzi	M	-	-	-	-	-	-	-
A. laeviventris	M	-	-	-	-	-	-	-
A. lemurinus	M	-	0.218	-	-	-	-	-
A. lineatus	I	-	-	-	-	-	-	-
A. liogaster	M	-	-	-	-	0.365	-	-
A. lionotus	M	-	-	-	-	-	-	-
A. litoralis	C	-	-	0.578	-	-	-	-
A. longitibialis	C	-	-	-	-	-	-	-
A. loveridgei	M	0.349	-	-	-	-	-	-
A. lucius	C	-	-	-	-	-	-	-
A. lynchi	M	-	0.381	-	-	-	-	-
A. lyra	M	-	-	-	-	-	0.361	-
A. macrinii	M	-	-	-	-	-	-	-
A. macrolepis	M	-	0.363	-	-	-	0.361	-
A. maculiventris	M	-	0.424	-	-	-	-	-
A. magnaphallus	M	-	0.270	-	-	-	0.270	-
A. mariarum	M	-	-	0.513	-	0.363	-	-
A. matudai	M	-	0.423	-	-	-	0.167	-
A. mccraniei	M	-	0.250	-	-	-	0.332	-
A. medemi	I	-	0.252	-	-	-	-	-
A. megapholidotus	M	-	-	0.431	-	-	-	-

A. meridionalis	M	-	-	0.503	-	-	-	-
A. microlepidotus	M	-	-	0.576	-	-	-	-
A. milleri	M	-	0.346	-	-	-	-	-
A. monensis	C	-	-	-	0.334	-	0.238	-
A. monticola	C	-	-	-	-	-	-	-
A. morazani	M	-	-	0.474	-	-	-	-
A. muralla	M	-	-	0.443	-	-	-	-
A. nebulosus	M	-	-	-	-	-	0.264	-
A. notopholis	M	-	0.221	-	-	-	-	0.652
A. omiltemanus	M	-	-	-	-	-	-	0.603
A. onca	M	-	-	-	-	-	-	-
A. ortonii	M	-	-	-	0.257	-	-	-
A. osa	M	-	0.177	0.576	-	-	0.344	-
A. oxylophus	M	-	-	-	-	-	-	-
A. parvauritus	M	-	-	-	-	-	-	-
A. paternus	C	-	-	-	-	-	-	-
A. pentaprion	M	-	-	-	-	-	-	-
A. petersii	M	-	-	-	-	-	-	-
A. pijolense	M	-	-	-	0.341	-	0.228	-
A. pinchoti	I	-	-	-	0.335	-	0.270	-
A. planiceps	M	-	0.284	-	-	-	-	-
A. poecilopus	M	-	0.348	-	-	-	0.213	-
A. pogus	C	-	-	0.457	-	-	-	-
A. porcus	C	-	-	-	-	-	-	-
A. pumilus	C	-	-	-	-	-	-	-
A. purpurgularis	M	-	0.385	-	-	-	0.245	-
A. quaggulus	M	-	*0.435*	-	-	-	-	-
A. quercorum	M	-	-	-	-	-	-	0.540
A. reconditus	C	-	-	-	-	-	-	-
A. rivalis	M	-	0.280	-	-	-	0.292	-
A. roatanensis	M	-	0.337	-	-	-	0.236	-
A. rodriguezii	M	-	0.360	0.426	-	-	-	-
A. rubribarbaris	M	-	-	-	-	0.396	-	-
A. ruibali	C	-	-	-	-	-	-	-
A. rupinae	C	-	0.361	-	-	-	-	-
A. salvini	M	-	-	-	-	-	-	-
A. schwartzi	C	-	-	-	-	-	-	-
A. scriptus	C	-	-	-	-	0.393	-	-
A. scypheus	M	-	0.348	-	-	-	-	-
A. serranoi	M	-	0.317	-	-	-	0.311	-

A. shrevei	C	-	0.442	0.573	-	-	0.211	-
A. sminthus	M	-	-	0.459	-	-	0.324	-
A. strahmi	C	-	-	-	-	-	-	-
A. subocularis	M	-	0.292	0.563	-	-	0.366	-
A. tandai	M	-	0.238	-	-	-	-	-
A. taylori	M	-	-	-	-	-	0.249	-
A. tolimensis	M	-	-	0.485	-	-	0.312	-
A. townsendi	I	-	0.363	-	-	-	0.273	-
A. trachyderma	M	-	0.237	-	-	-	-	-
A. tropidolepis	M	-	0.191	-	-	-	0.358	-
A. uniformis	M	-	0.419	-	-	-	-	-
A. unilobatus	M	-	-	0.332	-	-	-	-
A. vermiculatus	C	0.377	-	-	-	-	-	-
A. villai	I	-	0.281	-	-	-	-	-
A. vittigerus	M	-	-	-	-	-	-	-
A. wampuensis	M	-	0.154	-	-	-	-	-
A. wattsi	C	-	0.404	-	-	-	0.259	-
A. wellbornae	M	-	-	0.357	-	-	-	-
A. wermuthi	M	-	-	0.533	-	-	0.315	-
A. woodi	M	-	-	-	-	-	-	-
A. yoroensis	M	-	0.393	0.489	-	-	-	-
A. zeus	M	-	0.365	0.473	-	-	-	-

Table S6. List of 134 *Draconura* and previously unclassified Caribbean species (including the *a priori* ground ecomorph species) and the ecomorphs for which they satisfied the mean pairwise distance criterion (i.e., the mean pairwise distance to all members of an ecomorph was less than the largest MPD among the *a priori* members of that ecomorph). Values are the mean Euclidean distances to all of the *a priori* members of each ecomorph for which a given species satisfied the criterion in question. Abbreviations as in Table S4.

Species	Region	Crown-Giant	Ground	Grass-Bush	Trunk	Trunk-Crown	Trunk-Ground	Twig
A. altavelensis	C	-	-	-	0.319	-	-	-
A. amplisquamosus	M	-	-	0.541	-	-	-	-
A. apletophallus	M	-	0.458	0.588	-	-	0.429	-
A. aquaticus	M	-	0.484	-	-	-	-	-
A. argenteolus	C	-	0.532	-	0.403	-	0.417	-
A. armouri	C	-	-	-	-	0.469	-	-
A. auratus	M	-	-	0.495	-	-	-	-
A. barbatus	C	-	-	-	-	-	-	-
A. barbouri	C	-	0.547	0.448	-	-	-	-
A. barkeri	M	-	0.553	-	-	-	0.412	-
A. bartschi	C	-	-	-	-	-	-	-
A. beckeri	M	-	-	-	-	-	-	0.625
A. benedikti	M	-	0.552	-	0.423	-	0.349	-
A. bicaorum	I	-	0.475	-	-	-	0.382	-
A. biporcatus	M	-	-	-	-	-	-	-
A. bombiceps	M	-	0.525	-	-	-	-	-
A. boulengerianus	M	-	0.483	-	-	-	0.337	-
A. brasiliensis	M	-	0.465	-	-	-	-	-
A. brunneus	C	-	-	-	-	-	-	0.799
A. campbelli	M	-	0.547	-	-	-	-	-
A. capito	M	-	-	-	-	-	-	-
A. chamaeleonides	C	-	-	-	-	-	-	-
A. charlesmyersi	M	-	-	-	-	-	-	0.621
A. christophei	C	-	0.441	-	-	-	0.343	-
A. chrysolepis	M	-	0.443	-	-	-	-	-
A. cobanensis	M	-	0.548	-	-	-	-	-
A. concolor	I	-	-	-	-	-	0.327	-
A. conspersus	C	-	-	-	-	0.471	0.296	-
A. cristifer	M	-	-	-	-	-	-	0.752
A. cryptolimifrons	M	-	0.452	0.513	-	-	-	-
A. cupreus	M	-	0.497	0.506	-	-	-	-
A. cusuco	M	-	-	-	0.442	0.492	-	-

A. desechensis	C	-	-	-	-	-	0.421	-
A. dollfusianus	M	-	0.495	0.550	-	-	-	-
A. dunni	M	-	-	-	-	-	0.312	-
A. ernestwilliamsi	C	-	-	-	-	-	0.417	-
A. etheridgei	C	-	0.537	-	-	-	-	-
A. eugenegrahami	C	-	-	-	-	-	-	-
A. fuscoauratus	M	-	-	0.481	-	-	-	-
A. gadovii	M	-	0.546	-	-	-	0.372	-
A. gaigei	M	-	0.414	0.569	-	-	-	-
A. gracilipes	M	-	0.418	-	-	-	-	-
A. granuliceps	M	-	0.445	-	-	-	-	-
A. guamuhaya	C	-	-	-	-	-	-	-
A. heteropholidotus	M	-	-	0.585	-	-	-	-
A. hobartsmithi	M	-	0.529	-	-	-	0.410	-
A. humilis	M	-	0.553	-	-	-	-	-
A. imias	C	-	-	-	-	-	0.419	-
A. isolepis	C	-	-	-	-	-	-	0.596
A. johnmeyeri	M	-	-	-	-	-	0.278	-
A. kemptoni	M	-	-	0.599	-	0.432	-	-
A. kreutzi	M	-	-	-	-	-	-	-
A. laeviventris	M	-	-	-	-	-	-	-
A. lemurinus	M	-	0.406	-	-	-	0.434	-
A. lineatus	I	-	-	-	-	-	-	-
A. liogaster	M	-	-	-	0.440	0.426	0.430	-
A. lionotus	M	-	-	-	-	-	-	-
A. litoralis	C	-	-	0.657	-	-	-	-
A. longitibialis	C	-	-	-	-	-	0.431	-
A. loveridgei	M	0.439	-	-	-	-	-	-
A. lucius	C	-	-	-	-	-	-	-
A. lynchi	M	-	0.515	-	-	-	-	-
A. lyra	M	-	-	-	-	-	0.421	-
A. macrinii	M	-	-	-	-	-	-	-
A. macrolepis	M	-	0.496	-	-	-	0.421	-
A. maculiventris	M	-	0.526	-	-	-	-	-
A. magnaphallus	M	-	0.437	-	0.449	-	0.349	-
A. mariarum	M	-	-	0.592	-	0.446	-	-
A. matudai	M	-	0.548	-	-	-	0.276	-
A. mccraniei	M	-	0.431	-	-	-	0.397	-
A. medemi	I	-	0.426	-	-	-	-	-
A. megapholidotus	M	-	-	0.530	-	-	-	-

A. meridionalis	M	-	-	0.589	-	-	-	-
A. microlepidotus	M	-	-	0.655	-	-	-	-
A. milleri	M	-	0.492	-	-	-	-	-
A. monensis	C	-	-	-	0.376	-	0.328	-
A. monticola	C	-	-	-	-	-	-	-
A. morazani	M	-	-	0.548	-	-	-	-
A. muralla	M	-	-	0.530	-	0.480	-	-
A. nebulosus	M	-	-	-	0.445	-	0.341	-
A. notopholis	M	-	0.408	-	-	-	-	-
A. omiltemanus	M	-	-	-	-	-	-	-
A. onca	M	-	-	-	-	-	-	-
A. ortonii	M	-	-	-	0.325	-	-	-
A. osa	M	-	0.390	0.647	-	-	0.412	-
A. oxylophus	M	-	-	-	-	-	-	-
A. parvauritus	M	-	-	-	-	-	-	-
A. paternus	C	-	-	-	-	-	-	0.748
A. pentaprion	M	-	-	-	-	-	-	0.697
A. petersii	M	-	-	-	-	-	-	-
A. pijolense	M	-	-	-	0.377	-	0.320	-
A. pinchoti	I	-	-	-	0.379	0.473	0.351	-
A. planiceps	M	-	0.429	-	-	-	-	-
A. poecilopus	M	-	0.493	-	-	-	0.306	-
A. pogus	C	-	-	0.537	-	-	-	-
A. porcus	C	-	-	-	-	-	-	-
A. pumilus	C	-	-	-	-	-	-	-
A. purpurgularis	M	-	0.516	-	-	-	0.332	-
A. quaggulus	M	-	-	-	-	-	-	-
A. quercorum	M	-	-	-	-	-	-	-
A. reconditus	C	-	-	-	-	-	-	-
A. rivalis	M	-	0.440	-	-	-	0.364	-
A. roatanensis	M	-	0.482	-	-	-	0.328	-
A. rodriguezii	M	-	0.474	0.518	-	-	-	-
A. rubribarbaris	M	-	-	-	-	0.472	-	-
A. ruibali	C	-	-	-	-	-	-	-
A. rupinae	C	-	0.477	-	-	-	-	-
A. salvini	M	-	-	-	-	-	-	0.640
A. schwartzi	C	-	-	0.644	-	-	-	-
A. scriptus	C	-	-	-	-	0.467	-	-
A. scypheus	M	-	0.470	-	-	-	-	-
A. serranoi	M	-	0.463	-	-	-	0.381	-

A. shrevei	C	-	-	0.630	-	-	0.308	-
A. sminthus	M	-	-	0.537	-	-	0.392	-
A. strahmi	C	-	-	-	-	-	0.432	-
A. subocularis	M	-	0.444	0.629	-	-	0.427	-
A. tandai	M	-	0.424	-	-	-	-	-
A. taylori	M	-	-	-	-	-	0.334	-
A. tolimensis	M	-	-	0.568	-	-	0.381	-
A. townsendi	I	-	0.491	-	0.432	-	0.351	-
A. trachyderma	M	-	0.446	-	-	-	-	-
A. tropidolepis	M	-	0.398	-	-	-	0.424	-
A. uniformis	M	-	0.541	-	-	-	-	-
A. unilobatus	M	-	-	0.451	-	-	-	-
A. vermiculatus	C	0.447	-	-	-	-	-	-
A. villai	I	-	0.436	-	-	-	-	-
A. vittigerus	M	-	-	0.652	-	-	-	-
A. wampuensis	M	-	0.384	-	-	-	-	-
A. wattsi	C	-	0.528	0.650	-	-	0.343	-
A. wellbornae	M	-	-	0.475	-	-	-	-
A. wermuthi	M	-	-	0.596	-	-	0.385	-
A. woodi	M	-	-	-	-	-	-	-
A. yoroensis	M	-	0.501	0.569	-	-	-	-
A. zeus	M	-	0.492	0.558	-	-	-	-

Table S7. List of 134 *Draconura* and previously unclassified Caribbean species (including the *a priori* ground ecomorph species) and the ecomorphs for which they satisfied the nearest neighbor distance criterion (i.e., the distance to the nearest species assigned *a priori* to an ecomorph was less than the largest NND among the *a priori* members of that ecomorph). Values are the Euclidean distances to the nearest *a priori* member of each ecomorph for which a given species satisfied the criterion in question. Abbreviations as in Table S4.

Species	**Region**	**Crown-Giant**	**Ground**	**Grass-Bush**	**Trunk**	**Trunk-Crown**	**Trunk-Ground**	**Twig**
A. altavelensis	C	-	-	-	0.192	-	-	-
A. amplisquamosus	M	-	-	-	-	-	-	-
A. apletophallus	M	-	0.294	0.307	0.268	-	-	-
A. aquaticus	M	-	-	-	-	-	-	-
A. argenteolus	C	-	0.340	-	0.273	-	0.248	-
A. armouri	C	-	-	-	0.326	0.197	0.239	-
A. auratus	M	-	0.325	0.227	-	-	-	-
A. barbatus	C	-	-	-	-	-	-	-
A. barbouri	C	-	0.347	0.188	-	-	-	-
A. barkeri	M	-	-	-	-	-	-	-
A. bartschi	C	-	-	-	-	-	-	-
A. beckeri	M	-	-	-	-	-	-	0.314
A. benedikti	M	-	-	-	0.225	-	0.186	-
A. bicaorum	I	-	0.236	-	-	-	0.258	-
A. biporcatus	M	-	-	-	-	-	-	-
A. bombiceps	M	-	0.270	-	-	-	-	-
A. boulengerianus	M	-	-	-	-	-	0.190	-
A. brasiliensis	M	-	0.287	-	-	-	-	-
A. brunneus	C	-	-	-	-	-	-	-
A. campbelli	M	-	0.308	-	0.308	-	-	-
A. capito	M	-	0.272	-	-	-	-	-
A. chamaeleonides	C	-	-	-	-	-	-	-
A. charlesmyersi	M	-	-	-	-	-	-	0.276
A. christophei	C	-	0.301	-	0.229	-	0.209	-
A. chrysolepis	M	-	0.141	-	-	-	-	-
A. cobanensis	M	-	-	-	-	-	-	-
A. concolor	I	-	0.351	-	-	-	0.219	-
A. conspersus	C	-	-	-	-	0.233	0.203	-
A. cristifer	M	-	-	-	-	-	-	0.282
A. cryptolimifrons	M	-	0.179	-	-	-	-	-
A. cupreus	M	-	0.133	0.274	-	-	-	-
A. cusuco	M	-	-	-	0.306	0.162	-	-

A. desechensis	C	-	-	-	-	0.250	0.202	-
A. dollfusianus	M	-	0.154	0.295	0.323	-	-	-
A. dunni	M	-	-	0.284	0.275	-	0.102	-
A. ernestwilliamsi	C	-	-	-	-	-	0.219	-
A. etheridgei	C	-	0.334	-	-	-	-	-
A. eugenegrahami	C	-	-	-	-	-	-	-
A. fuscoauratus	M	-	0.261	0.246	-	-	-	-
A. gadovii	M	-	0.349	-	-	-	0.258	-
A. gaigei	M	-	0.273	-	-	-	-	-
A. gracilipes	M	-	0.163	-	-	-	-	-
A. granuliceps	M	-	0.296	-	-	-	-	-
A. guamuhaya	C	-	-	-	-	-	-	-
A. heteropholidotus	M	-	0.325	0.314	0.245	0.289	-	-
A. hobartsmithi	M	-	0.345	0.275	-	-	0.242	-
A. humilis	M	-	0.135	-	0.325	-	-	-
A. imias	C	-	-	-	-	-	0.254	-
A. isolepis	C	-	-	-	-	-	-	0.182
A. johnmeyeri	M	-	-	-	-	-	0.173	-
A. kemptoni	M	-	-	-	-	0.213	-	-
A. kreutzi	M	-	-	-	0.238	0.245	-	-
A. laeviventris	M	-	-	-	-	-	-	-
A. lemurinus	M	-	0.221	-	-	-	-	-
A. lineatus	I	-	-	-	-	-	-	-
A. liogaster	M	-	-	-	0.290	0.092	0.178	-
A. lionotus	M	-	-	-	-	-	-	-
A. litoralis	C	-	-	-	-	-	-	-
A. longitibialis	C	-	-	-	-	-	-	-
A. loveridgei	M	0.230	-	-	-	-	-	-
A. lucius	C	-	-	-	-	-	-	-
A. lynchi	M	-	-	-	0.320	-	-	-
A. lyra	M	-	-	-	-	-	0.259	-
A. macrinii	M	0.299	-	-	-	-	-	-
A. macrolepis	M	-	0.345	-	-	-	0.230	-
A. maculiventris	M	-	0.251	-	-	-	-	-
A. magnaphallus	M	-	0.288	-	0.195	-	0.200	-
A. mariarum	M	-	-	0.262	-	0.279	0.256	-
A. matudai	M	-	-	0.287	0.295	-	0.057	-
A. mccraniei	M	-	0.315	-	-	-	-	-
A. medemi	I	-	0.176	-	-	-	-	-
A. megapholidotus	M	-	0.262	-	-	-	-	-

A. meridionalis	M	-	-	-	-	-	-	-
A. microlepidotus	M	-	-	-	-	0.262	-	-
A. milleri	M	-	-	-	-	-	0.263	-
A. monensis	C	-	-	-	0.260	0.201	0.180	-
A. monticola	C	-	-	-	-	-	-	-
A. morazani	M	-	-	0.210	-	-	-	-
A. muralla	M	-	-	0.225	-	-	-	-
A. nebulosus	M	-	-	-	0.221	-	0.169	-
A. notopholis	M	-	0.271	-	-	-	-	-
A. omiltemanus	M	-	-	-	-	-	-	-
A. onca	M	-	-	-	-	-	-	-
A. ortonii	M	-	-	-	0.235	0.188	-	-
A. osa	M	-	0.233	-	-	-	0.267	-
A. oxylophus	M	-	-	-	-	-	-	-
A. parvauritus	M	-	-	-	-	-	-	-
A. paternus	C	-	-	-	-	-	-	0.412
A. pentaprion	M	-	-	-	-	-	-	0.417
A. petersii	M	-	-	-	-	-	-	-
A. pijolense	M	-	-	-	0.244	0.296	0.206	-
A. pinchoti	I	-	-	0.316	0.171	0.241	0.242	-
A. planiceps	M	-	0.141	-	-	-	-	-
A. poecilopus	M	-	-	-	-	-	0.169	-
A. pogus	C	-	-	0.289	-	-	-	-
A. porcus	C	-	-	-	-	-	-	-
A. pumilus	C	-	-	-	-	-	-	-
A. purpurgularis	M	-	-	-	-	-	0.227	-
A. quaggulus	M	-	0.245	-	-	-	-	-
A. quercorum	M	-	-	-	-	0.265	-	-
A. reconditus	C	-	-	-	-	-	0.206	-
A. rivalis	M	-	0.255	-	-	-	0.172	-
A. roatanensis	M	-	0.305	0.266	0.341	-	0.162	-
A. rodriguezii	M	-	0.192	0.282	0.352	-	-	-
A. rubribarbaris	M	-	-	-	-	0.251	-	-
A. ruibali	C	-	-	-	-	-	-	-
A. rupinae	C	-	0.198	-	-	-	-	-
A. salvini	M	-	-	-	-	-	-	0.339
A. schwartzi	C	-	0.309	-	0.314	-	-	-
A. scriptus	C	-	-	-	-	0.239	0.253	-
A. scypheus	M	-	0.152	-	-	-	-	-
A. serranoi	M	-	0.271	-	-	-	0.235	-

A. shrevei	C	-	-	0.246	0.297	-	0.153	-
A. sminthus	M	-	-	0.131	0.299	-	0.235	-
A. strahmi	C	-	-	-	-	-	0.236	-
A. subocularis	M	-	0.240	-	0.327	-	-	-
A. tandai	M	-	0.254	-	-	-	-	-
A. taylori	M	-	-	-	-	-	0.192	-
A. tolimensis	M	-	0.342	0.278	0.259	-	0.195	-
A. townsendi	I	-	0.295	-	0.162	-	0.233	-
A. trachyderma	M	-	0.354	-	-	-	-	-
A. tropidolepis	M	-	0.308	-	0.320	-	-	-
A. uniformis	M	-	0.135	-	0.324	-	-	-
A. unilobatus	M	-	0.260	0.311	-	-	-	-
A. vermiculatus	C	0.122	-	-	-	-	-	-
A. villai	I	-	0.229	-	-	-	-	-
A. vittigerus	M	-	0.346	-	-	-	-	-
A. wampuensis	M	-	0.273	-	-	-	-	-
A. wattsi	C	-	-	0.240	0.223	-	0.169	-
A. wellbornae	M	-	-	0.312	-	-	-	-
A. wermuthi	M	-	-	0.164	0.290	-	0.182	-
A. woodi	M	-	-	-	-	-	-	-
A. yoroensis	M	-	0.236	-	0.247	-	-	-
A. zeus	M	-	0.264	-	-	-	-	-

Table S8. DFA posterior probabilities for ecomorph classifications of 123 *Draconura* and previously unclassified Caribbean species (excluding *a priori* ground ecomorph species) made with the inclusion of the ground ecomorph. Abbreviations as in Table S4.

Species	Region	Crown-Giant	Ground	Grass-Bush	Trunk	Trunk-Crown	Trunk-Ground	Twig
A. amplisquamosus	M	-	0.018	0.875	-	0.031	0.076	-
A. apletophallus	M	-	0.836	0.001	-	-	0.163	-
A. aquaticus	M	-	0.631	-	-	-	0.369	-
A. argenteolus	C	-	0.006	-	0.907	0.003	0.084	-
A. armouri	C	-	-	-	-	0.007	0.993	-
A. auratus	M	-	0.006	0.994	-	-	-	-
A. avelensis	C	-	-	-	0.998	0.002	-	-
A. barbatus	C	0.001	-	-	-	-	-	0.999
A. barkeri	M	-	0.396	-	-	-	0.604	-
A. bartschi	C	-	-	-	0.011	0.975	0.013	-
A. beckeri	M	-	-	-	0.295	0.091	-	0.614
A. benedikti	M	-	0.079	-	-	-	0.921	-
A. bicaorum	I	-	0.731	-	-	-	0.269	-
A. biporcatus	M	0.155	0.001	-	-	0.006	0.837	-
A. boulengerianus	M	-	0.870	-	0.008	-	0.122	-
A. brunneus	C	-	-	-	-	0.996	-	0.004
A. campbelli	M	-	0.889	0.001	-	-	0.110	-
A. capito	M	-	0.938	-	-	-	0.062	-
A. chamaeleonides	C	0.981	-	-	-	-	-	0.019
A. charlesmyersi	M	-	-	-	-	0.003	-	0.997
A. christophei	C	-	0.555	-	0.060	0.006	0.379	-
A. cobanensis	M	-	0.818	0.079	-	-	0.103	-
A. concolor	I	-	0.001	-	-	0.010	0.989	-
A. conspersus	C	-	-	-	0.001	0.026	0.973	-
A. cristifer	M	-	-	-	-	-	-	1.000
A. cryptolimifrons	M	-	0.986	0.002	-	-	0.011	-
A. cupreus	M	-	0.983	0.001	-	-	0.016	-
A. cusuco	M	-	-	-	0.426	0.567	0.008	-
A. desechensis	C	-	-	-	-	0.061	0.939	-
A. dollfusianus	M	-	0.992	0.001	-	-	0.006	-
A. dunni	M	-	0.013	-	-	0.002	0.986	-
A. ernestwilliamsi	C	-	-	-	0.001	0.012	0.988	-
A. etheridgei	C	-	0.996	-	-	-	0.004	-
A. eugenegrahami	C	-	-	-	-	0.001	0.998	-
A. fuscoauratus	M	-	0.424	0.570	-	-	0.006	-

A. gadovii	M	-	0.224	-	0.001	-	0.775	-
A. gaigei	M	-	0.995	0.002	-	-	0.003	-
A. gracilipes	M	-	1.000	-	-	-	-	-
A. granuliceps	M	-	1.000	-	-	-	-	-
A. guamuhaya	C	-	-	-	-	-	-	1.000
A. heteropholidotus	M	-	0.289	-	-	-	0.710	-
A. hobartsmithi	M	-	0.240	0.653	-	-	0.108	-
A. imias	C	-	-	-	0.022	-	0.978	-
A. isolepis	C	-	-	-	-	-	-	1.000
A. johnmeyeri	M	-	-	-	-	0.028	0.972	-
A. kemptoni	M	-	-	-	-	0.992	0.008	-
A. kreutzi	M	-	-	-	0.069	0.048	0.883	-
A. laeviventris	M	-	-	-	0.013	0.940	0.048	-
A. lemurinus	M	-	0.987	-	-	-	0.013	-
A. lineatus	I	-	-	-	-	-	0.999	-
A. liogaster	M	-	0.001	-	-	0.001	0.998	-
A. lionotus	M	-	0.008	-	-	-	0.992	-
A. litoralis	C	-	-	-	0.006	0.891	0.103	-
A. longitibialis	C	-	0.002	-	0.001	-	0.997	-
A. loveridgei	M	0.510	-	-	-	0.002	0.489	-
A. lucius	C	-	-	-	0.269	0.382	0.349	-
A. lynchi	M	-	0.927	-	-	-	0.073	-
A. lyra	M	-	0.017	0.002	-	-	0.981	-
A. macrinii	M	0.026	-	-	-	0.332	0.642	-
A. macrolepis	M	-	0.180	-	-	-	0.820	-
A. maculiventris	M	-	0.638	0.004	-	-	0.358	-
A. magnaphallus	M	-	0.631	-	-	-	0.369	-
A. mariarum	M	-	0.008	0.001	-	0.023	0.968	-
A. matudai	M	-	0.012	-	-	-	0.988	-
A. mccraniei	M	-	0.841	-	-	-	0.159	-
A. medemi	I	-	0.999	-	-	-	0.001	-
A. megapholidotus	M	-	0.890	-	-	-	0.110	-
A. meridionalis	M	-	0.955	0.037	-	-	0.007	-
A. microlepidotus	M	-	0.017	-	-	-	0.983	-
A. milleri	M	-	0.974	-	-	-	0.026	-
A. monensis	C	-	-	-	0.101	0.017	0.882	-
A. monticola	C	-	0.015	0.985	-	-	-	-
A. morazani	M	-	0.182	0.815	-	-	0.003	-
A. muralla	M	-	0.003	0.897	-	0.004	0.095	-
A. nebulosus	M	-	0.013	-	0.046	0.003	0.938	-

A. notopholis	M	-	0.999	-	-	-	-	-
A. omiltemanus	M	-	-	-	-	0.999	-	-
A. onca	M	-	0.944	-	-	-	0.056	-
A. ortonii	M	-	-	-	0.980	0.020	-	-
A. osa	M	-	0.967	-	-	-	0.033	-
A. oxylophus	M	-	0.102	-	-	-	0.898	-
A. parvauritus	M	-	0.002	-	-	0.003	0.995	-
A. paternus	C	-	-	-	-	1.000	-	-
A. pentaprion	M	-	-	-	0.203	0.307	-	0.490
A. petersii	M	0.032	-	-	-	0.899	0.069	-
A. pijolense	M	-	0.008	-	-	-	0.992	-
A. pinchoti	I	-	0.005	-	-	0.001	0.994	-
A. poecilopus	M	-	0.039	-	-	-	0.961	-
A. pogus	C	-	0.001	0.999	-	-	0.001	-
A. porcus	C	0.999	-	-	-	-	-	0.001
A. pumilus	C	-	-	-	1.000	-	-	-
A. purpurgularis	M	-	0.210	-	-	0.001	0.789	-
A. quercorum	M	-	-	-	0.003	0.150	0.847	-
A. reconditus	C	-	-	-	-	-	1.000	-
A. rivalis	M	-	0.888	-	-	-	0.112	-
A. roatanensis	I	-	0.362	-	-	-	0.638	-
A. rodriguezii	M	-	0.998	0.001	-	-	0.001	-
A. rubribarbaris	M	-	-	0.005	-	0.995	-	-
A. ruibali	C	-	0.001	-	0.028	0.895	0.077	-
A. rupinae	C	-	0.976	0.023	-	-	0.001	-
A. salvini	M	-	-	-	-	0.088	-	0.912
A. schwartzi	C	-	0.503	0.360	-	0.001	0.136	-
A. scriptus	C	-	-	-	-	0.003	0.997	-
A. serranoi	M	-	0.717	0.115	-	-	0.168	-
A. shrevei	C	-	0.024	-	-	-	0.975	-
A. sminthus	M	-	0.428	0.130	-	0.001	0.441	-
A. strahmi	C	-	-	-	-	-	1.000	-
A. subocularis	M	-	0.959	-	-	-	0.041	-
A. taylori	M	-	0.001	-	0.001	0.009	0.988	-
A. tolimensis	M	-	0.511	0.001	-	0.003	0.485	-
A. townsendi	I	-	0.073	0.001	-	0.001	0.926	-
A. tropidolepis	M	-	0.988	-	-	-	0.012	-
A. unilobatus	M	-	0.830	0.109	0.005	0.002	0.054	-
A. vermiculatus	C	0.991	-	-	-	0.001	0.008	-
A. villai	I	-	1.000	-	-	-	-	-

A. vittigerus	M	-	0.680	0.091	-	-	0.229	-
A. wampuensis	M	-	0.991	-	-	-	0.009	-
A. wattsi	C	-	0.026	-	-	-	0.973	-
A. wellbornae	M	-	0.413	0.048	-	0.003	0.535	-
A. wermuthi	M	-	0.045	0.912	-	0.009	0.034	-
A. woodi	M	-	0.562	-	-	-	0.438	-
A. yoroensis	M	-	0.942	0.001	-	-	0.057	-
A. zeus	M	-	0.946	0.054	-	-	-	-

Table S9. Assessments of the final ecomorph assignments (including intermediate species) made with and without the ground ecomorph based on natural history data. Species for which microhabitat data contradicted their ecomorph assignments were categorized further based on whether they exhibited morphological support for an alternative ecomorph assignment that matched their ecology: (1) satisfies at least one Euclidean distance criterion for an ecomorph consistent with their ecology, (2) ecomorph with the next highest DFA posterior probability matches their ecology, (3) no support for an alternative assignment that matches their ecology, and (4) ecology does not resemble any ecomorph. Region abbreviations as in Table S4. CG = Crown-Giant, G = Ground, GB = Grass-Bush, T = trunk, TC = Trunk-Crown, TG = Trunk-Ground, Tw = Twig, SA = Semi-Aquatic.

Species	Region	Caribbean Ecomorphs Only	With Ground Ecomorph	Microhabitat	Assessment	References
A. altavelensis	C	T	T	T	Data Deficient	Henderson & Powell (2009); Losos (2009)
A. amplisquamosus	M	GB	-	GB or TG	Consistent	McCranie & Köhler (2015); Brown et al. (2018)
A. apletophallus	M	TG	-	G or TG	Consistent	Köhler & Sunyer (2008)
A. aquaticus	M	-	G / TG	G or TG; Rock (Horizontal)†; SA	Consistent	Savage (2002); Muñoz et al. (2015)
A. argenteolus	C	T / TG	T	T or TG; Rock (Vertical)†	Consistent	Henderson & Powell (2009)
A. armouri	C	TG	TG	TG; Rock (Vertical)†	Consistent	Henderson & Powell (2009); Muñoz & Losos (2018)
A. auratus	M	GB	GB	GB	Supported	Avila-Pires (1995)
A. barbatus	C	Tw / CG	-	Tw	Consistent	Leal & Losos (2000)
A. barkeri	M	TG	TG / G	G or TG; Rock (Horizontal)†; SA	Consistent	Birt et al. (2001)
A. benedikti	M	TG	TG	GB or TG	Consistent	Lotzkat et al. (2011)
A. bicaorum	I	TG	G / TG	TG	Consistent	McCranie & Köhler (2015)
A. biporcatus	M	CG / TG	TG / CG	CG	Consistent	Savage (2002); Rengifo et al. (2015); Irschick et al. (1997)
A. boulengerianus	M	TG	G / TG	G or TG; Rock (Horizontal)†;	Consistent	Fitch (1978); Köhler et al. (2014)
A. charlesmyersi	M	Tw	Tw	Arboreal	Data Deficient	Savage (2002)
A. christophei	C	-	G / TG	TG; Rocks†	Consistent	Henderson & Powell (2009)
A. cobanensis	M	-	G / TG	-	Data Deficient	-
A. concolor	I	TG	TG	TG	Supported	Corn & Dalby (1973); Calderón-Espinosa & Barragán-Forero (2011)
A. conspersus	C	TG	TG	TC or TG	Consistent	Henderson & Powell (2009)

A. cristifer	M	Tw	Tw	Arboreal	Data Deficient	Köhler & Acevedo (2004)
A. cryptolimifrons	M	-	G	GB or TG	Consistent	Köhler & Sunyer (2008)
A. cupreus	M	-	G	G or TG	Consistent	Fitch (1975); Savage (2002); McCranie & Köhler (2015)
A. cusuco	M	TC	TC / T	T or TG	Consistent	Flemin & Hooker 1975; McCranie & Köhler (2015)
A. desechensis	C	TG	TG	TG	Supported	Henderson & Powell (2009)
A. dollfusianus	M	TG / GB	G	GB or TG	Consistent	Henderson & Fitch (1975); Köhler & Acevedo (2004)
A. dunni	M	TG	TG	TG	Supported	Smith & Spieler (1945); Köhler et al. (2014)
A. ernestwilliamsi	C	TG	TG	TG; Rocks†	Consistent	Henderson & Powell (2009)
A. etheridgei	C	-	G	Bushes	Contradicted (3)	Henderson & Powell (2009)
A. fuscoauratus	M	GB	GB / G	GB or TG	Consistent	Avila-Pires (1995); Vitt et al. (2003); Moreno-Arias et al. (2020)
A. gadovii	M	TG	-	TG; Rock (Vertical)†	Supported	Fitch & Henderson (1976)
A. gaigei	M	TG / GB	G	TG	Consistent	Köhler et al. (2012)
A. gracilipes	M	-	G	GB	Contradicted (3)	Boada Viteri (2015)
A. granuliceps	M	-	G	G	Supported	Castro-Herrera (1988), Rengifo et al. (2015); Moreno-Arias et al. (2020)
A. imias	C	TG	TG	TG; Rocks†	Consistent	Henderson & Powell (2009)
A. isolepis	C	Tw	Tw	Leaves	Contradicted (4)	Henderson & Powell (2009)
A. johnmeyeri	M	TG	TG	TG	Supported	McCranie & Köhler (2015)
A. kemptoni	M	TC	TC	TG	Contradicted (2)	Savage (2002); Ponce & Köhler (2008)
A. lemurinus	M	TG	G	T or TG	Consistent	Savage (2002); D'Cruze & Stafford (2006); McCranie & Köhler (2015)
A. liogaster	M	TG	TG	TG	Supported	Köhler et al. (2014)
A. longitibialis	C	TG	TG	TG; Rock (Vertical)†	Consistent	Gifford et al. 2002
A. loveridgei	M	CG / TG	CG / TG	TG	Consistent	McCranie & Köhler (2015)
A. lucius	C	TG / T	-	TG; Rock (Vertical)†	Consistent	Henderson & Powell (2009)
A. lynchi	M	-	G	SA	Data Deficient	Miyata (1985)
A. lyra	M	TG	TG	TG	Supported	Castro-Herrera (1998); Poe (2009); Boada (2015); Rengifo (2015)
A. macrolepis	M	TG	-	SA; G	Contradicted (1)	Castro-Herrera (1998)
A. maculiventris	M	-	G / TG	T or TG	Consistent	Rengifo et al. (2015); Boada Viteri (2015); Moreno-Arias (2020)
A. magnaphallus	M	TG	-	-	Data Deficient	-

A. mariarum	M	TG	TG	GB or TG	Consistent	Bock et al. (2009)
A. matudai	M	TG	TG	-	Data Deficient	-
A. mccraniei	M	TG	G	TG	Consistent	Jackson (1973); Köhler et al. (2016)
A. medemi	I	-	G	TG	Contradicted (2)	Ayala & Williams (1988); Phillips et al. (2019)
A. meridionalis	M	GB	-	G or GB	Consistent	Vitt (1991); Vitt & Caldwell (1993); Langstroth (2006)
A. milleri	M	TG	G	-	Data Deficient	-
A. monensis	C	TG / T	TG / T	TG	Supported	Henderson & Powell (2009)
A. morazani	M	GB	-	GB	Supported	McCranie & Köhler (2015)
A. muralla	M	GB	-	G or GB or TG	Consistent	McCranie & Köhler (2015)
A. nebulosus	M	TG	TG	T or TG	Consistent	Lister & Aguayo (1992); Ramírez-Bautista & Benabib (2001)
A. notopholis	M	TG / GB	G	G or GB	Consistent	van den Elsen & Schuchmann (1980); Castro-Herrera (1988)
A. ortonii	M	T / TC	T	T or TC	Supported	Avila-Pires (1995); Vitt & Zani (1996); Moreno-Arias (2020)
A. osa	M	TG	G	TG	Consistent	&rews (1971); Köhler et al. (2010)
A. oxylophus	M	-	TG / G	G or TG; SA	Supported	Vitt et al. (1996); Muñoz et al. (2015)
A. petersii	M	TC / CG	-	CG or TC	Supported	McCranie & Köhler (2015)
A. pijolense	M	TG	TG	TG	Supported	McCranie & Köhler (2015)
A. pinchoti	I	TG	TG	TG	Supported	Corn & Dalby (1973); Calderón-Espinosa & Barragán-Forero (2011)
A. poecilopus	M	TG	TG	TG; SA	Supported	Campbell (1973); Muñoz et al. (2015)
A. pogus	C	GB	GB	GB or TG	Consistent	Roughgarden (1995); Henderson & Powell (2009)
A. purpurgularis	M	TG	-	TG	Supported	McCranie et al. (1993); McCranie & Köhler (2015)
A. reconditus	C	TG	TG	T or TC or TG	Consistent	Hicks (1972); de Queiroz pers. obs.
A. rivalis	M	TG	-	G; Rock (Horizontal)†; SA	Consistent	Williams (1984)
A. roatanensis	I	TG	TG / G	TG	Supported	McCranie & Köhler (2015)
A. rodriguezii	M	GB / TG	G	G or GB or TG	Consistent	Fitch et al. (1976); D'Cruze & Stafford (2006); McCranie & Köhler (2015)
A. rubribarbaris	M	TC	TC	-	Data Deficient	-
A. rupinae	C	GB / TG	G	G; Rock (Horizontal)†	Data Deficient	Williams & Webster (1974); Losos (2009)
A. salvini	M	Tw / TC	Tw	Arboreal	Data Deficient	Bienentreu et al. (2013)

A. schwartzi	C	GB	-	G or TG	Consistent	Medina Díaz et al. (2005); Henderson & Powell (2009)
A. scriptus	C	TG	TG	TG	Supported	Henderson & Powell (2009)
A. serranoi	M	TG / GB	-	TG	Consistent	Köhler & Acevedo (2004)
A. shrevei	C	TG	TG	TG; Rock (Vertical)†	Consistent	Muñoz & Losos (2018)
A. sminthus	M	GB / TG	-	G or GB or TG	Consistent	McCranie & Köhler (2015)
A. strahmi	C	TG	TG	TG; Rock (Vertical)†	Consistent	Henderson & Powell (2009)
A. subocularis	M	TG	G	G or TG; Rock (Horizontal)†	Consistent	Fitch et al. (1976); Köhler et al. (2014)
A. taylori	M	TG	TG	TG; Rock (Vertical)†	Consistent	Smith & Spieler (1945); Fitch & Henderson (1976); Köhler et al. (2014)
A. tolimensis	M	TG	G / TG	GB or TG	Consistent	Ardila-Marín et al. (2008)
A. townsendi	I	TG	TG	TG	Supported	Savage (2002); Phillips et al. (2019)
A. tropidolepis	M	TG	G	TG	Consistent	Fitch (1972); Savage (2002)
A. unilobatus	M	GB	-	T or TC	Contradicted (2)	McCranie & Köhler (2015)
A. vermiculatus	C	CG	CG	T or TG; SA	Contradicted (2)	Henderson & Powell (2009); Schettino et al. 2010
A. villai	I	-	G	T or TG	Contradicted (2)	Fitch & Henderson (1976); Sunyer et al. (2013)
A. vittigerus	M	GB / TG	G / TG	TG	Consistent	Moreno-Arias et al. (2020)
A. wampuensis	M	-	G	G or TG	Consistent	McCranie & Köhler (2001, 2015)
A. wattsi	C	TG	TG	G or TG	Consistent	Williams (1962); Lazell (1972); Losos & de Queiroz (1997); Kolbe et al. (2008)
A. wellbornae	M	TG / GB	-	TG or GB	Consistent	McCranie & Köhler (2015)
A. wermuthi	M	GB	GB	G or GB or TG	Consistent	Suyner et al. (2008)
A. woodi	M	-	G / TG	T or TC	Contradicted (3)	Pounds (1988); Savage (2002)
A. yoroensis	M	-	G	GB or TG	Contradicted (1)	McCranie & Köhler (2015)
A. zeus	M	GB / TG	G	GB or TG	Consistent	McCranie & Köhler (2015)

† Species that perch on top of small rocks (“Horizontal”) were considered ecologically similar to the ground ecomorph, while species that perch head-down on vertical rock surfaces (rock walls or sides of large rocks; “Vertical”) were considered ecologically similar to the trunk-ground ecomorph (Figure S3). Some species are known to frequently perch on rocks, but data were insufficient to distinguish between whether they perch more commonly on top of rocks or on rock walls (indicated by the absence of a specified preference).

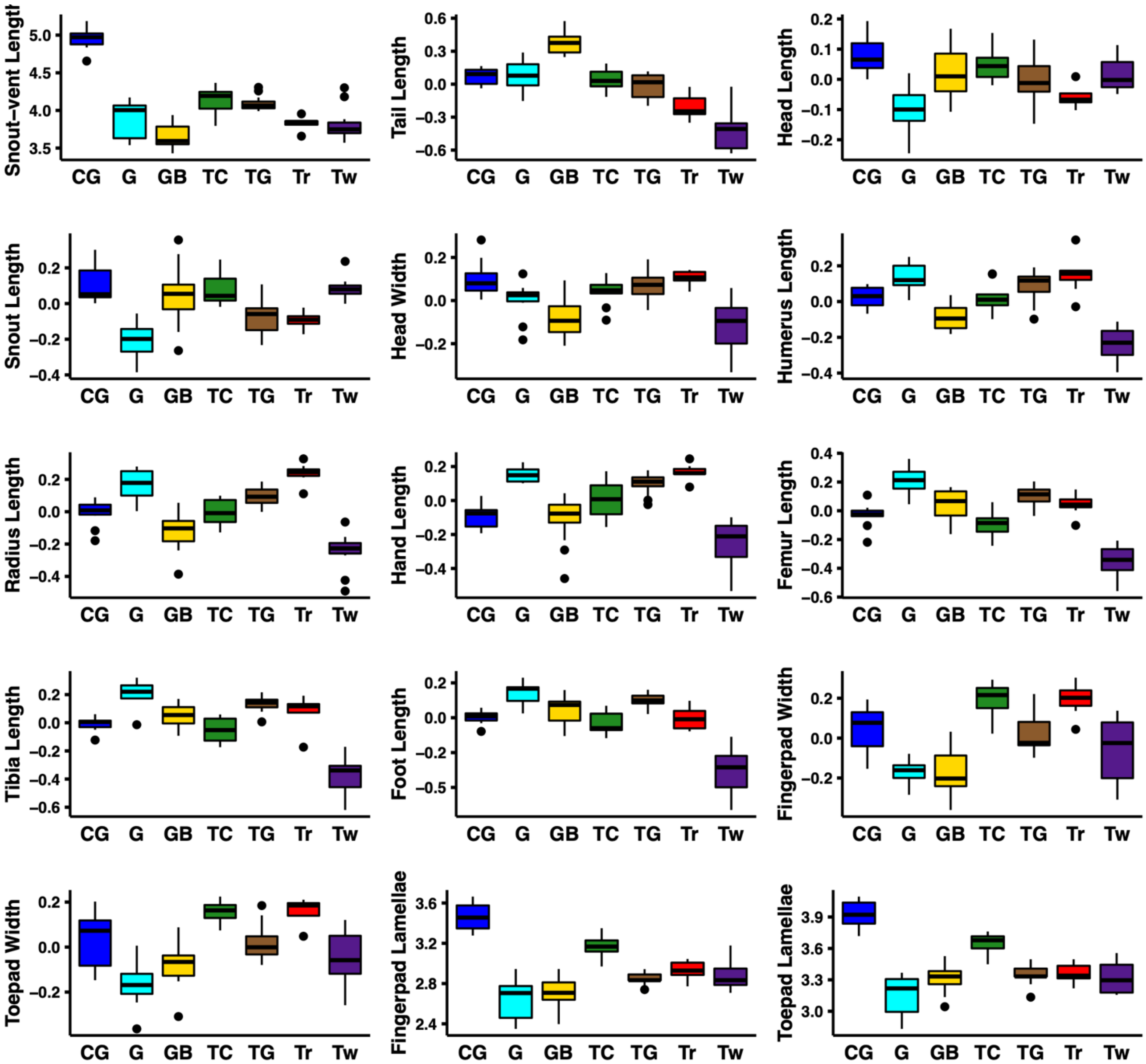

Figure S1. Variation in individual traits among the *a priori* Caribbean and ground ecomorph species. All traits are size-corrected residuals from a regression against snout-vent length, except for snout-vent length. CG = Crown-Giant, GB = Grass-Bush, G = Ground, T = Trunk, TC = Trunk-Crown, TG = Trunk-Ground, Tw = Twig.

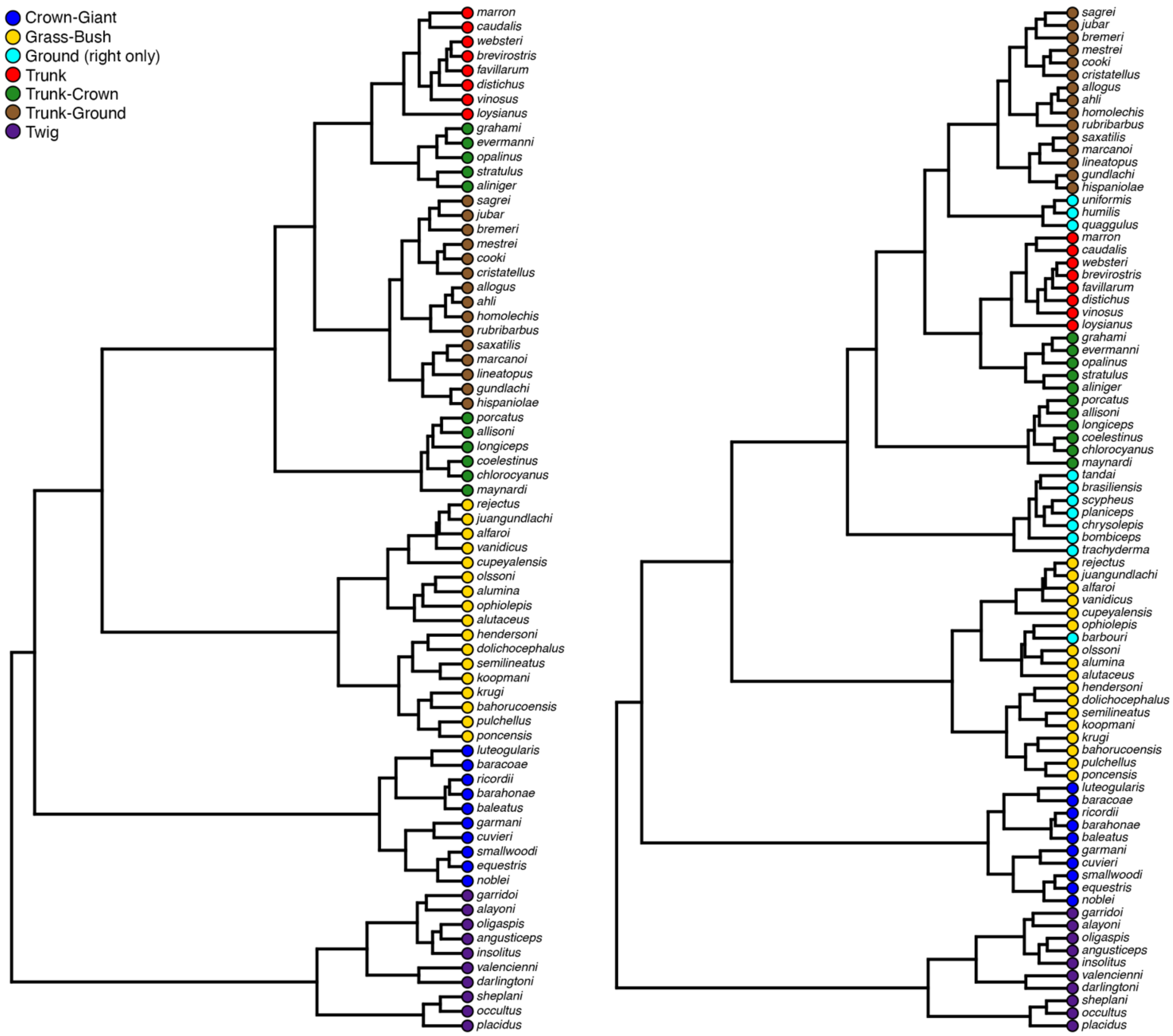

Figure S2. Dendrograms showing the morphological clusters inferred from two hierarchical cluster analyses performed using only the *a priori* members of the Caribbean ecomorphs (left) and with inclusion of the *a priori* ground ecomorph species (right).

Figure S3. Results from the *l1ou* adaptive landscape analysis performed with the MCC phylogeny showing shifts in Caribbean and *Draconura* anole morphology based on pPC axes 1-5. Shifts are indicated by circles, colored by bootstrap support value. Tree branches are colored by regime, with some regimes evolved by multiple ancestral lineages converging towards the same adaptive peaks. Regimes in the Caribbean generally correspond to the Caribbean ecomorphs and are loosely colored as in Figure S1, with some ecomorphs made up of multiple non-convergent regimes indicated by the different color shades. Grey tree branches represent the ancestral regime. Tip circles indicate our final ecomorph classes with the inclusion of the ground ecomorph.

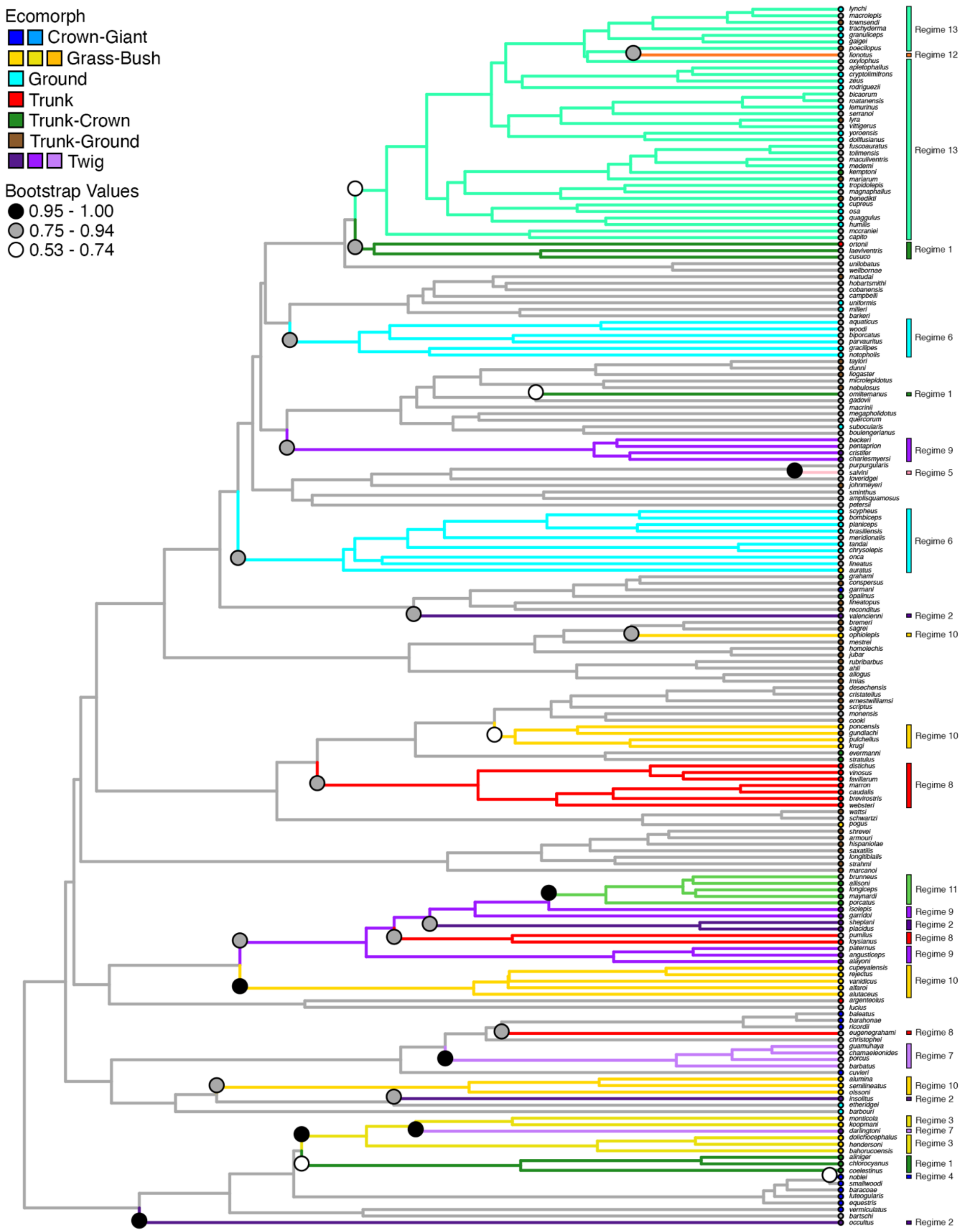

Figure S4. Results from the *l1ou* adaptive landscape analysis performed with the time-calibrated phylogeny showing shifts in Caribbean and *Draconura* anole morphology based on pPC axes 1-5. Shifts are indicated by circles, colored by bootstrap support value. Tree branches are colored by regime, with some regimes evolved by multiple ancestral lineages converging towards the same adaptive peaks. Regimes in the Caribbean generally correspond to the Caribbean ecomorphs and are loosely colored as in Figure S1, with some ecomorphs made up of multiple non-convergent regimes indicated by the different color shades. Grey tree branches represent the ancestral regime. Tip circles indicate our final ecomorph classes with the inclusion of the ground ecomorph.

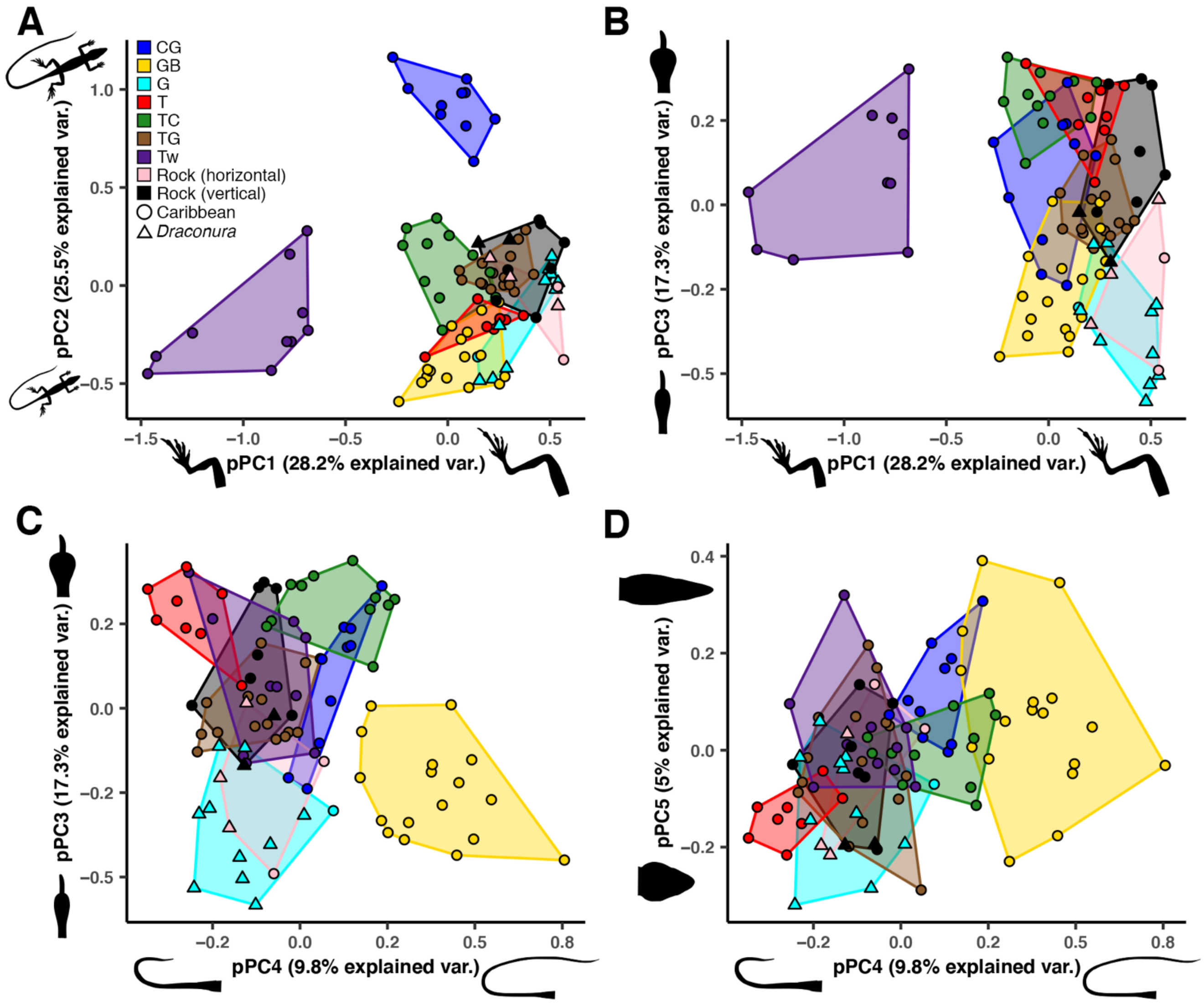

Figure S5. Relative positions of the six Caribbean ecomorphs, the putative ground ecomorph, and several saxicolous species in the morphological space based on a phylogenetic principal component analysis. Rock-dwelling species are split into those that perch on vertical rock surfaces (black) such as large rocks or rock/cave walls, and those that perch horizontally on top of small rocks (pink). Many of the former species were classified into the trunk-ground ecomorph, while most of the latter were assigned to the ground ecomorph. Randomization tests (see Methods) provide further support that saxicolous species do not constitute their own ecomorph(s). Based on centroid distances, the space occupied by the vertical rock species was not significantly different from that occupied by the trunk-ground ecomorph (p = 0.09). Likewise, the space occupied by the horizontal rock species was not significantly different from that occupied by the ground ecomorph (p > 0.99). However, spaces occupied by the horizontal and vertical rock species differed significantly (p = 0.042). Black (vertical) rock species include: *A. argenteolus*, *A. armouri*, A. *bartschi*, *A. gadovii*, *A. longitibialis*, *A. lucius*, *A. shrevei*, *A. strahmi, A. taylori*. Pink (horizontal) rock species include *A. aquaticus*, *A. barkeri*, *A. monticola*, *A. rivalis*, and *A. rupinae*.

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