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Intra- and interspecific aggressive interactions of *Anolis acutus* Hallowell, 1856 on St. Croix, U.S. Virgin Islands, with a review of *Anolis* jaw-locking

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Abstract. During a study of endemic *Anolis acutus* Hallowell, 1856 on St. Croix, we serendipitously observed intraspecific jaw-locking and interspecific combat with the endangered St. Croix Ground Lizard, *Pholidoscelis polops* (Cope, 1862). Jaw-locking is an extreme form of aggression in *Anolis* lizards, in which two males bite each other's snouts. To put our observation of jaw-locking in *A. acutus* into context, we reviewed the occurrence of this behaviour across *Anolis* species. Our analysis suggests that jaw-locking primarily occurs in trunk-ground and trunk-crown ecomorphs, indicating that it may occur more frequently in species with distinct ecological adaptations from specific habitats. We also found that *Anolis* species engaging in jaw-locking have greater sexual size dimorphism (SSD) than anoles overall and that these species are mostly found on islands. The connection between habitat, SSD, and intensity of territoriality we report supports previous studies on *Anolis* evolution. Furthermore, our record of interspecific combat between *A. acutus* and *P. polops* is the first report of this interaction and represents the only record of interfamilial lizard aggression that we found in the literature.

Keywords. Ecomorph, behaviour, Caribbean herpetology, community science, territoriality, sexual size dimorphism.

Introduction

Aggression can be critical to shaping spatial segregation within and between lizard species (Ruibal and Philibosian, 1974a; Bolger and Case, 1992; Langkilde and Shine, 2007). Lizards usually use displays to deter other lizards from occupying a specific location, but escalated aggression, such as physical contact and biting, is common across species (Losos, 2009; Whiting and Miles, 2019). In some interspecific pairings, physical aggression is implicated in structural habitat displacement or competitive exclusion of the subordinate species, and most physical aggression between lizards is asymmetric and favours the larger individual or species (Jenssen et al., 1984; Bolger and Case, 1992; Langkilde and Shine, 2007). Documenting physical aggression within and between lizard species is therefore crucial in order to understand habitat partitioning and coexistence. Given their exceptional diversity, understanding these behaviours and their consequences in anoles is particularly important.

Anoles are well studied, particularly in their adaptive radiation in the Greater Antilles. In that adaptive radiation, six consistent ecomorphs (i.e., morphological forms that predict their structural habitat usage) have been identified (Losos, 2009). Species from the American mainland and other island chains generally do not exhibit the same ecomorphs as in the Greater Antilles (Siliceo-Cantero et al., 2016; Poe and Anderson, 2019), but they often partition habitats in similar ways.

Even though aggression and territoriality in *Anolis* have been studied (e.g., Losos, 2009; Bush and Simberloff, 2018), substantial diversity exists within the genus, and many details remain unknown (Losos, 2009). Studies have documented that most species employ the same territorial behaviours of dewlap display and head-bobbing, although the intensity of displays and the addition of other behaviours vary from species to species (Losos, 1985, 2009; Queral et al., 1995). When an invading anole does not back down following territorial displays by a resident, the rivals will attack each other, and these attacks frequently include biting (Losos, 2009). Much less is known about the factors that cause territorial disputes in anoles to escalate into physical combat or about the frequency with which such aggression occurs. Jaw-locking, in which two lizards bite each other's mouths, is among the most intense forms of physical aggression and is particularly understudied in *Anolis*.

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Multiple factors, including ecomorphology and habitat, can influence the occurrence, intensity, and consequences of physical aggression in anoles (Lailvaux and Irschick, 2007; Losos, 2009; Johnson et al., 2010). Furthermore, increased physical aggression and jaw-locking could be connected to sexual size dimorphism (SSD), as SSD can be a product of selection for increased physical aggression between males (Butler et al., 2000; Lailvaux and Irschick, 2007). SSD is greater in ecomorphs that occupy more open habitats (Butler et al., 2000). Although evidence supports connections between territoriality, habitat usage, and SSD in anoles (Butler et al., 2000; Lailvaux and Irschick, 2007), these connections have not been investigated in relation to jaw-locking.

Although interspecific physical aggression has been documented infrequently for anoles (Culbertson and Herrmann, 2019), studies have shown that such events can result in exclusion of the subordinate species from specific microhabitats, either through physical interspecific contests or the threat of these contests through dewlap displays (Jenssen et al., 1984; Culbertson and Herrmann, 2019; Clifton et al., 2023). Most prominently, aggression by *A. cristatellus* in Puerto Rico causes *A. cooki* to move to lower and smaller diameter perches in localities where the two species are sympatric (Jenssen et al., 1984). Most studies investigating physical interspecific aggression involving anoles have been limited to a few species, often focusing on how invasive *A. sagrei* cause microhabitat shifts in native species like *A. carolinensis* (Culbertson and Herrmann, 2019). These studies have also focused primarily on physical aggression between anoles (Jenssen et al., 1984; Culbertson and Herrmann, 2019; Clifton et al., 2023), but aggression can also occur between anoles and lizards of other genera and families.

Anolis acutus is endemic to the island of St. Croix, U.S. Virgin Islands, and its offshore cays (Buck Island, Green Cay, Ruth Cay, and Protestant Cay) and is the sole anole species in the region (Ruibal and Philibosian, 1974b). As a solitary anole, *A. acutus* has not formally been assigned to an ecomorph category (Losos, 2009), but morphological and structural habitat use (Ruibal and Philibosian, 1974b) indicate that the species is closest to a trunk-crown ecomorph that perches on trunks of trees but also uses higher perches. This categorisation is further supported by the fact that the sister taxa of *A. acutus* is a trunk-crown ecomorph (Losos, 2009). *Anolis acutus* is sexually dimorphic in size, with males reaching larger maximum snout–vent lengths (SVL) than females (Ruibal et al., 1972). As in other anoles, this sexual size dimorphism might be indicative of sexual selection leading to greater territoriality, including physical aggression.

Anolis acutus exhibits a social structure in which many individuals occupy small territories on the same tree, each defending its territory against interlopers (Ruibal and Philibosian, 1974a). This often aggressive defence of territories from conspecifics has been studied mainly through the lens of display behaviours. Typically, individuals utilise low-intensity displays that cause intruding conspecifics to flee. However, high-intensity aggressive displays occur when residents are removed and their territories become available (Ruibal and Philibosian, 1974a). This increased aggression lasts until the unoccupied territory is filled and a new social structure is established. Physical aggressive contact has been observed in this high-intensity aggression, but no details have been noted beyond physical contact (Ruibal and Philibosian, 1974a). The number of aggressive encounters and aggression intensity in *A. acutus* does not appear to vary between sexes. However, females have smaller territories that are frequently within male territories. Female territories also do not overlap, whereas those of males do (Ruibal and Philibosian, 1974a).

Although *A. acutus* is the only anole in St. Croix, the St. Croix Ground Lizard (*Pholidoscelis polops*) is also endemic to St. Croix and its offshore cays. However, due to invasive predators, particularly mongooses (*Urva auropunctata*), *P. polops* was extirpated from the main island of St. Croix and now inhabits only four offshore cays (Fitzgerald et al., 2015). Little is known about the diets of either *P. polops* or *A. acutus*, but some dietary overlap is likely, as both species primarily consume invertebrates (Fitzgerald et al., 2015; Stevens, 2024). In addition, although *A. acutus* and *P. polops* differ in microhabitat use, they likely overlap spatially when foraging. *Pholidoscelis polops* forages entirely in the leaf litter (Fitzgerald et al., 2015), and *A. acutus* often forages on the ground (Ruibal and Philibosian, 1974b).

We herein report what is, to the best of our knowledge, the first records of jaw-locking in *A. acutus* and the first observation of an aggressive physical interaction between *A. acutus* and *P. polops*. We also reviewed the current knowledge on jaw-locking in anoles and present our findings on the extent of this behaviour among species and the morphological and distributional patterns found within these species in comparison to the overall genus.

Materials and Methods

***Anolis acutus* aggression.** From July–August 2025, we conducted surveys of *A. acutus* populations across St. Croix as part of a separate study on the species. Our surveys included all four offshore cays and multiple sites on the main island, and our observations of *A. acutus* aggression were made during these surveys.

Bibliographic review of jaw-locking in *Anolis*. To review the occurrence of jaw-locking in *Anolis*, we conducted searches in the Web of Science and Google Scholar using the following terms: ("*Anolis*" OR "Anole") AND ("Jaw lock" OR "jawlock" OR "Jaw-lock" OR "biting each other" OR "biting" OR "aggression" OR "fight" OR "fighting"). The Google Scholar search included dates up to February 2026, and the Web of Science search covered the years 1900–2025 and the first two months of 2026. We also reviewed all volumes of the journal *Herpetological Review*, the information published by Losos (2009), and the website *Anole Annals* (https://www.anoleannals.org) for observations of jaw-locking in *Anolis*. We also scanned citations in relevant articles.

In addition to academic sources, we reviewed publicly available social media posts for additional photographic or video records of jaw-locking in *Anolis*. We searched Instagram, YouTube, and Facebook using search terms like "fight" and "aggression". We searched Google Images using the same search terms as our searches of Web of Science and Google Scholar.

Ecomorphology. From Losos (2009), we obtained information on the ecomorphs of most *Anolis* species for which we found documentation of jaw-locking and supplemented that information by conducting species-specific literature searches. Most mainland species, species from islands outside of the Greater Antilles, and some solitary anoles in the Greater Antilles (species that are on smaller islands not sympatric with any congeners) do not correspond to the six traditional ecomorphs (Siliceo-Cantero et al., 2016), but most of these species more closely resemble one particular ecomorph of the six rather than being equally different from all six. In these cases, we categorised each species as the closest ecomorph based on information in the literature. If a species was not considered close to any of the described ecomorph categories, we recorded the ecomorph designation as "none".

Testing for ecomorphological patterns in reports of jaw-locking. Using Losos (2009), we calculated the number of *Anolis* species assigned to each of the six ecomorphs. Losos (2009) did not provide ecomorph information on all species that fall into the six categories, and research since has categorised more anoles, but the data from Losos (2009) is presumably representative of the general proportional distribution of ecomorphs across anoles because it is comprehensive for island species known at the time and general patterns in habitat partitioning appear to be similar across island groups and the mainland. We used a multinomial test to test the hypothesis that reports of jaw-locking in *Anolis* species differ from a random distribution across ecomorphs. We conducted statistical analyses in R Statistical Software v4.1.2 (R Core Team, 2021) using the EMT package (Menzel, 2025).

Assessing patterns in SSD. We calculated SSD intensity for all *Anolis* species using data from the ReptTraits database (Oskyrko et al., 2024). Where available, we downloaded the maximum SVL for males and females of each species and calculated SSD as (SVL of the larger sex/SVL of the smaller sex) – 1 (Cox et al., 2003). Cox et al. (2003) assigned negative values when males were larger than females, but we kept all values positive since males were always larger so there was no need to show this differentiation. We calculated the mean and standard deviation for the SSD values for both the lizards within our subset and for all *Anolis* species. Using these data, we conducted a one-sample *t*-test to compare our subset to the mean of all species to determine whether species that have been observed jaw-locking (i.e., the most aggressive species) have greater sexual size dimorphism.

Results

Interspecific aggression between *Anolis acutus* and *Pholidoscelis polops*. At 11:40 h on 28 July 2025, we observed three aggressive contests between a male *A. acutus* and a male *P. polops* on Protestant Cay, St. Croix (Fig. 1). We initially observed the *P. polops* individual foraging on the ground in a clearing next to a restaurant and bar (Fig. 1C). The encounter began after the anole descended onto the ground from a nearby wooden fence and stared at its opponent, which continued to forage until the anole attacked. This first contest consisted of a rapid series of repeated attacks from the anole towards the *P. polops* including head-butts and attempted bites at the head and neck of the *P. polops*. These attacks occurred as the lizards moved in a circular manner, with the *P. polops* attempting to avoid the attacks while the anole pursued. These attacks lasted only a few seconds and ended when the *P. polops* attempted a single bite. In response to the counterattack from the *P. polops*,

Figure 1. Captured moments of aggressive interactions between an *Anolis acutus* and a *Pholidoscelis polops* on Protestant Cay, St. Croix, U.S. Virgin Islands, with an overview of the site. (A) The anole is seen fleeing from its opponent following the first contest. (B) The anole is poised to jump onto the *P. polops* in the third contest. (C) An overview of the area where the interactions took place. The *A. acutus* is circled in red and the *P. polops* is circled in blue. Photos by E. Griffin Nicholson.

the anole retreated and fled to a nearby cinderblock (Fig. 1A). The *P. polops* continued to forage for about 2 min while the anole moved from the cinderblock to a nearby Spider Lily (genus *Hymenocallis*) directly above the *P. polops*.

The second contest began when the anole jumped down from the spider lily onto the *P. polops*. The second contest progressed in similar fashion to the first, with the anole initiating aggressive attacks, the lizards moving in a circular manner, and the anole again repelled when the *P. polops* made a single response. During the next 10 min, both lizards moved out of our sight before they returned to the same location. In preparation for the third and final contest, the anole climbed to the top of a ladder that was laying on the ground adjacent to the foraging *P. polops* and across from the Spider Lily (Fig. 1B). The attack began once again when the anole jumped onto the *P. polops*. The lizards briefly tussled once more, with the anole headbutting and biting at the *P. polops* as the two moved together in a circular manner, and the anole fled again when the *P. polops* snapped at it. Generally, the *P. polops* appeared unbothered by the presence of the anole and only briefly fought back to abruptly end each encounter.

Jaw-locking in *Anolis acutus*. At 14:13 h on 18 July 2025, we observed two male *A. acutus* in combat with locked jaws on a Gumbo Limbo Tree (*Bursera simaruba*) on Buck Island, St. Croix (Fig. 2). The two males of similar size were perched on the tree about 2.4 m above the ground and had already locked jaws before we encountered them. During our observation, the lower lizard repeatedly struck the head of the other lizard in rapid succession using its right forelimb. The lizards slowly moved around and up the tree during our

Figure 2. Two male *Anolis acutus* engaged in jaw-locking combat on a Gumbo Limbo Tree (*Bursera simaruba*) on Buck Island, St. Croix, U.S. Virgin Islands. Photo by E. Griffin Nicholson.

observation, with their jaws remaining locked and the lower lizard continuing to attack the other lizard with its right forelimb. The entire encounter lasted at least 15 min beginning with our first observation until the lizards moved out of view.

Review of jaw-locking in *Anolis*. Including our new observation in *A. acutus*, we found that jaw-locking has only been reported in 22 of 435 (5.1%) of the *Anolis* species listed in the Reptile Database (Table 1; Uetz et al., 2026). We found several additional reports of *Anolis* aggression that described biting or jaw-sparring but did not include any that did not specify that jaw-locking had occurred (Jenssen, 1979; Losos, 1985; Queral et al., 1995; Lailvaux and Irschick, 2007). All observations of jaw-locking in *Anolis* were reported to have occurred between males, and of the 22 species for which reports exist, 13 (59%) came from online media sources with no corresponding reports in the scientific literature. Anoles that were recorded jaw-locking have a mean SSD of 0.53 ± 0.21, which is significantly higher than the SSD value across all *Anolis* species (0.30, $p < 0.001$). Most of the jaw-locking species (18 of 22, 82%) are native to islands, and most are trunk-crown or trunk-ground ecomorphs (combined: 15 of 22, 68%; trunk-crown: 9 of 22, 41%; trunk-ground: 6 of 22, 27%). Of the other four ecomorphs, each had only one jaw-locking species. This differs significantly (multinomial test, $p = 0.036$) from the proportion of species corresponding to each ecomorph when considering all *Anolis* species (12% crown-giant, 18% trunk-crown, 27% trunk-ground, 13% twig, 6% trunk, 23% grass-bush).

Discussion

Our observation of interspecific aggression between *A. acutus* and *P. polops* stands out amongst the literature on interspecific aggression in lizards. That the larger *P. polops* (Meiri, 2024) was the victor in the aggressive encounters with the *A. acutus* is not surprising. Larger body size has consistently been found to predict the winners of competitive and aggressive interactions between lizards of different species (Korner et al., 2000; Langkilde and Shine, 2007). However, our observation is unusual in terms of the phylogenetic relationship between the two species. Most documented interspecific aggression in lizards (e.g., Bolger and Case, 1992; Korner et al., 2000; Langkilde and Shine, 2007; Lailvaux et al., 2012) occurs between congeners, or at least between confamilials. We doubt that this was the first observation of physical conflict between lizards of different families, but we found no other reports in our search of the literature.

The most likely cause of interspecific aggression in lizards is some form of competition, such as adaptive interference for shelter or food, or mistaken identity resulting in protection of resources, such as mates or refugia (Korner et al., 2000). In the interaction we observed, the two species might experience spatial overlap during foraging (Ruibal and Philibosian, 1974b; Fitzgerald et al., 2015), so we cannot rule out aggressive interference competition. However, because the encounter was initiated by the non-foraging anole, it seems more likely that this was an example of territorial

Table 1. *Anolis* species in which jaw-locking during aggressive physical contests has been reported. Ecomorphs include trunk-crown (TC), trunk-ground (TG), trunk (TR), crown-giant (CG), grass-bush (GB), and twig (TW). "None" in this column identifies species that are not close to any of the traditional six ecomorphs of the adaptive radiation in the West Indies or are lacking ecomorphology data. An asterisk (*) indicates that the ecomorph is not explicitly identified in the literature but either explicitly identified as the closest ecomorph within the literature or categorised as the ecomorph by us based on morphological and ecological data. We also provide maximum female and male snout–vent length ($maxSVL_F$ and $maxSVL_M$, respectively) and a numerical value to report the degree of sexual dimorphism (SSD): the higher the value, the bigger the males relative to females in the species. We were unable to calculate this value for *A. brunneus*, *A. marcanoi*, and *A. scriptus*. We also identify whether species are members of an island (I) or continental (C) fauna. A superscripted dagger (†) identifies online media sources.

Species	Ecomorph	$maxSVL_F$	$maxSVL_M$	SSD	Native Range	Fauna	Behaviour Source	Ecomorph Source
acutus	TC*	43.1	67	0.55	St. Croix (USVI)	I	This study; Harrigan, 2024†	Ruibal and Philibosian, 1974b
aeneus	none	46.5	80	0.72	Grenada, St. Vincent, Grenadines	I	Stamps and Krishnan, 1997	
agassizi	none	77.1	114	0.48	Malpelo Island (Colombia)	I	Rand, 1972	
allisoni	TC	56.6	100	0.77	Cuba	I	The Travelaholics, 2010†	Losos, 2009
bimaculatus	TC*	61	125	1.05	St. Kitts, Nevis, St. Eustatius	I	Losos, 2009	Losos and de Queiroz, 1997
brunneus	TC	unknown	76	unknown	Bahamas	I	Johnson and Battles, 2012†	Losos, 2009
carolinensis	TC	49.3	75	0.52	Southeastern United States	C	Brown, 1988	Mattingly and Jayne, 2004
cristatellus	TG	50.9	78	0.53	Puerto Rico, BVI, USVI	I	Richter, 2021†	Losos, 2009
distichus	TR	43.4	53	0.22	Bahamas, Dominican Republic, Haiti	I	Glor, 2011†	Losos, 2009
equestris	CG	142	190	0.34	Cuba	I	Hoyos, 2025†	Losos, 2009
gingivinus	TG*	48	72	0.50	Anguilla, St. Barthélemy, St. Martin	I	Les Fruits de Mer, undated†	Beuttell and Losos 1999
grahami	TC	44.5	75	0.69	Jamaica	I	Koenig, 2014†	Losos, 2009
marcanoi	TG	unknown	65	unknown	Dominican Republic	I	Losos, 1985	Losos, 2009
marmoratus	TC*	48.5	85	0.75	Guadeloupe	I	Muñoz, 2011†	Beuttell and Losos 1999
maynardi	TC	51	76	0.49	Cayman Islands	I	Connor, 2020†	Losos, 2009
nebulosus	TG*	40.8	59.3	0.45	Mexico	C	Jenssen, 1971	Siliceo-Cantero et al., 2016
pogus	GB*	40.5	58	0.43	St. Martin	I	Losos, 2012†	Beuttell and Losos, 1999
polylepis	none	45.4	59.4	0.31	Costa Rica, Panama	C	Hesemans, 2020†	
proboscis	TW	73.7	83.6	0.13	Ecuador	C	Quirola et al., 2017	Quirola et al., 2017
sagrei	TG	47.7	75	0.57	Cuba, Bahamas, Cayman Islands, Jamaica	I	Baeckens et al., 2018	Losos, 2009
scriptus	TG	unknown	76	unknown	Bahamas, Turks and Caicos	I	My Turks and Caicos Blog, 2010†	Losos, 2009
stratulus	TC	39.4	61	0.55	Puerto Rico, BVI, USVI	I	VideotecaFaunaPR, 2024†	Losos, 2009

defence. Why the *A. acutus* would consider the *P. polops* a territorial competitor is puzzling. The two species differ in appearance and size (Cope, 1862; Lazell, 1972; Ruibal and Philibosian, 1974b; Meiri, 2024), and lizards are capable of discriminating between species on a very fine scale (Korner et al., 2000). Mistaken species identity therefore seems unlikely in this case.

Differences in microhabitat use between *P. polops* and *A. acutus* (McNair, 2003) suggest that the former is not a competitive threat for the latter. However, Lailvaux et al. (2012) suggested that, due to a lack of familiarity, encounters between sympatric lizard species that differ in niches and rarely come into contact could be more aggressive than other interspecific encounters. Based on the differences in the species and the anole focusing solely on attacking the *P. polops* rather than attempting to forage on the same invertebrates, we hypothesise that the anole attacked the *P. polops* based on a perceived territorial invasion but that this perception was incorrect and due to a lack of familiarity and subsequent skewed threat assessment. This hypothesis is testable through manipulation of invertebrate abundance and exposure of *A. acutus* to *P. polops* in laboratory enclosures or by other means.

Although our observation of jaw-locking of *A. acutus* males is the first for the species in the scientific literature, we found a recent social media post of two male *A. acutus* jaw-locking in urban Frederiksted, St. Croix (Harrigan, 2024), a very different habitat than that on Buck Island. Because of these observations from differing habitats, we hypothesise this behaviour might be relatively common, albeit underreported, across *A. acutus*, but more research is needed to test this hypothesis. If injuries to the tail or toes of *A. acutus*, which are relatively common in some contexts, can be shown to be a consequence of intraspecific aggression, then this would suggest that hyperaggressive behaviour, such as jaw-locking, may be common in the species (Stevens et al., 2026). While the factors that led to the encounter we observed are unknown, it is most likely that they were related to territoriality or access to females. Anoles are not strictly polygynous, and females will mate with multiple males (Kamath and Losos, 2017), but evidence suggests that sexual selection affecting males in open habitats leads to sexual size dimorphism and more intense territoriality (Butler et al., 2000; Bush and Simberloff, 2018). *Anolis acutus* occurs in such habitats, exhibits SSD, and males are known to be intensely territorial (Ruibal et al., 1972; Ruibal and Philibosian, 1974a). What causes the progression from less intense and less costly dewlap displays to jaw locking in the species, or whether progression even occurs, remains unknown. It has been reported that intraspecific aggression can skip stages of intensity (Calsbeek and Marnocha, 2006).

Our review of jaw-locking across *Anolis* species incorporated information from both the scientific literature and from non-scientific sources (e.g., blogs, social media posts). We found that jaw-locking *Anolis* species are more likely to have a higher SSD value than anoles as a whole, are more likely to reside on islands, and are more likely to fall into the trunk-ground or trunk-crown ecomorph categories (Table 1). Higher SSD is associated with increased testosterone levels in a species (Cox et al., 2009), and elevated testosterone is also known to contribute to increased aggression (Salvador et al., 1997) and perhaps more instances of jaw-locking. A similar number of *Anolis* species occur on mainlands and islands (Poe and Anderson, 2019), so our pattern of finding jaw-locking to be more frequently reported on islands may result from higher intersexual niche partitioning and SSD in island systems (Butler et al., 2007; Toyama et al., 2025). However, we cannot rule out that these observational differences are not just differences in observer biases as islands may get more frequent visitors, so future studies should examine these patterns in more detail.

Moreover, we found that the trunk-crown and trunk-ground ecomorphs are more likely to exhibit jaw-locking, and these ecomorphs have higher SSD values than other ecomorphs (Butler et al., 2000, 2007; Johnson et al., 2010) and tend to have the highest territorial overlap (Johnson et al., 2010). One occurrence of jaw-locking, in the twig ecomorph *A. proboscis*, contradicts this because twig ecomorphs generally have the lowest territory overlap (Johnson et al., 2010; Quirola et al., 2017). Jaw-locking may occur across anoles but may be more noticeable in more territorial ecomorphs due to higher frequency of occurrence. Though there is potential for our review to be biased to more noticeable ecomorphs and to areas of high human density (Geurts et al., 2023), previous research has found similar patterns in regard to other aspects of territoriality in anoles (Butler et al., 2000; Lailvaux and Irschick, 2007). Therefore, our records seem to be representative of biological patterns while also highlighting the value of public engagement in ecological data collection.

Our observations of jaw-locking and aggression in *A. acutus* advance our knowledge on both intra- and interspecific aggression of anoles. Our review of jaw-

locking puts our observations into a broader context and adds insight into patterns across the *Anolis* genus. Future research should continue to delve deeper into aggressive interactions of lizards to better elucidate broad-scale patterns.

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