Chapter 3

Collecting: How to find and catch anoles

Museum biologists refer to the process of obtaining specimens from nature as *collecting*. This chapter is about collecting anoles. Although the material in this chapter was written with museum biologists in mind—specifically those engaged in biodiversity research—the practices detailed here should aid any individual who desires to find and secure anoles.

Collecting anoles may be considered a form of *herping*. To herp is to search for amphibians and nonavian reptiles[1]. Herping is performed by professional herpetologists conducting biological research at field sites and children catching frogs in city parks. The verb *to herp* is an informal term, not yet in standard dictionaries as of this writing[2], whereas the term herpetology has been in use since 1824 according to merriamwebster.com. These terms derive from the Greek root herpein, meaning to creep, a pejorative[3] reference to the supposed creeping nature of reptiles and amphibians.

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[1] Perhaps contrary to popular belief, birds are members of Reptilia.

[2] With this note I am advocating for a grassroots movement to have the verb *to herp* recognized as a real word.

[3] For example, a careful reader might detect some antipathy in Carol Linnaeus' 1750 description of herps: "Most amphibia [=reptiles and amphibians] are abhorrent because of their cold body, pale colour, cartilaginous skeleton, filthy skin, fierce aspect, calculating eye, offensive smell, harsh voice, squalid habitation, and terrible venom." But aside from those things he was cool with them.

Herping for individuals of a particular species or group of species may warrant the use of specialized techniques that herpetologists have developed and passed on over academic generations. For example, snake biologists will drive roads slowly at night, searching for sinuous three-dimensional shapes that show up bright against pavement in the glare of headlights. Turtle biologists may lay out baited floating traps or snorkel deep in ponds to find aquatic species. Lizard biologists may use blowguns or scattershot to secure individuals that are too fast or too high in the habitat to grab by hand. These techniques sometimes develop in concert with technological advancements (Figure 1). For example, extremely bright lights marketed towards security professionals or night mountain bikers have enhanced our ability to find reptiles and amphibians at night, and suspended walkways have rendered previously unreachable treetop canopy faunas accessible.


Flashlights Reveal Frog Monsters

Camera Hunters Find Strange Reptiles

Figure 1. Article in *Popular Science*, 1923, describing use of lights for night herping.

As with other herps, herping for anoles involves some preparations, techniques, and tools that are tailored to the group. Below I describe the practices used by my lab to collect anoles. We have used these approaches to collect 246 species of *Anolis*, including several new to science.

Planning a field trip to collect anoles

I am a taxonomist and phylogeneticist, which means my research involves describing new species and figuring out how species are related to each other. These research goals necessitate collecting as many species of anole as possible, and my lab group plans its field trips accordingly. Below I describe steps that we take before leaving on a trip to help ensure successful collecting.

Some weeks before a trip to collect anoles I will compile a list of anole species present in the area to be visited. The area to be visited may be selected based on a specific research question (e.g., whether Isla Escudo de Veragua contains an anole fauna that is different from the fauna of the Panamanian mainland) or simply because that area contains a high level of anole species diversity (e.g., the Colombian Andes). I use resources such as Vertnet (an online database of museum holdings of vertebrate specimens, including the locations where individuals were found), field guides, and primary literature to determine the species content of the country or region where fieldwork is planned and to get some idea of the relative rarity of species[4]. In addition I will use these resources to identify areas (e.g., parks, roads, mountains) where particular rare species have been found, and to search for areas where anole species diversity has been shown or is expected to be high. Google Earth is a wonderful tool for

[4] Vertnet lists 1126 specimens of *Anolis polylepis* and 8 specimens of *A. insignis* from Costa Rica. Which species do you think would be harder to find during a trip to that country?

identifying promising roads that extend through potential anole habitat at appropriate elevations. All of this information is processed with reference to the specific goals of the trip, which generally involve collecting as much anole diversity as possible but may reflect targeting particular anole species for collection, or a desire to find species that are new to science. An ecotourist might want to maximize diversity, or to target particular spectacular anoles. Table 1 shows some localities with outstanding anole diversity; my lab has visited each of these areas and confirmed species content.

Efficient collection of anoles requires special tools, which will be discussed below, as well as gear that is typical to most tropical biologists. The ubiquity of rain in the tropics means that nearly every item brought on a trip must be evaluated with respect to its performance when wet. Rubber shell boots are preferred over hiking boots for this reason and for their protection against plants and insects[5]. Light pants and long-sleeved shirts that dry quickly are desirable, as is a thin, completely waterproof raincoat. A global positioning system (gps) unit is useful for documenting localities and not getting lost, and a high-resolution digital camera for specimen and dewlap photos is essential. A small laptop computer may be brought along for internet access, but this should be a cheap model, essentially considered disposable due to the high likelihood of damage and theft. A field notebook and pencils or pens that work in wet conditions are used to document the trip. Many biologists prefer small, loose-leaf binders so pages may be rearranged, and "rite in the rain" paper that resists the effects of moisture. In addition to the high-powered herping lights discussed below, a mini headlamp for

[5] Hiking boots and running shoes function as giant ladders to guide stinging ants to your legs.

reading, writing field notes, and otherwise operating in darkness is needed. A small, battery-powered fan can bring relief when sleeping in hot conditions. For temporary storage of anoles, I prefer typical grocery-store gallon-sized ziplock bags with the more secure "slider" closure. These are thin enough that anoles may breathe, and thick enough that tearing is unlikely. Supplies (and techniques) for preserving anoles and other herps are listed in Pisani (1973).

For museum biologists, the final aspect of planning a trip is to obtain permits to collect and possibly export anoles. Administrative bodies such as the Autoridad Nacional de Ambiente de Panamá (ANAM) and the Instituto Nacional de Recursos Naturales (INRENA) in Peru regulate collecting and distribute permits detailing restrictions on allowable species and specimen counts in response to applications justifying a request to collect. Successful completion of the permitting process ranges from impossible to achievable with a lot of effort and several months of planning. The best option is to work closely with local museum or university scientists, which of course brings myriad additional advantages for learning and collaboration. But the permitting process may be difficult even for local scientists well-versed in the administrative guidelines of their pertinent agencies. Permitting agencies frequently are staffed with nonbiologists with little or no training in conservation, and the decisions of such agencies regarding species and specimen number restrictions often are mysterious. Still, although obtaining scientific collecting permits can be a frustrating process, following all legal guidelines is a necessity. Understanding local regulations and obtaining appropriate permits are critical parts of trip planning

How to find and catch anoles

There are two main approaches to catching anoles: noosing and spotlighting. These approaches correspond mostly but not completely to daytime and nighttime work, respectively.

Figure 2. Noosing an anole.

Noosing involves placing a loop of string suspended from a pole around the neck of a lizard and pulling tight to snare the individual. The string is structured as a tiny loop (~ 5 mm in diameter) tied tight with a larger, noosing loop extending through the tiny loop such that when an item such as a lizard neck is inside the larger loop, pulling tight will secure the larger loop around that item (Figure 2). Herpetologists vary in their choice of noosing string. Many use dental floss for its smoothness, flexibility, and relative visibility against forest backgrounds. Others use fishing line, especially kinds that are highly visible and can be molded to stay rigid when extending a noose in the wind[6]. For the pole component of a noose, most herpetologists use fishing poles but any stick

[6] Spiderwire is a favorite of mine.

will do[7]. Retractable poles are especially useful for ease of transport, but bring concerns about stiffness. A rigid pole is essential for successful noosing at a distance, especially in inclement weather.

Successful noosing requires dexterity, steadiness, and patience. It usually is most effective to bring the noose towards a lizard slowly, allowing the anole to notice it and become comfortable with its presence. Sometimes an anole will ignore the invading loop completely. Other times, they will attack the noose, presumably mistaking it for a prey item. While lowering the noose towards the anole, it sometimes helps to look just past the lizard to another point in the substrate as the noose is maneuvered into position. Strangely enough, lizards are often sensitive to eye contact. Once a lizard detects that you are trying to catch it, the process of capture becomes much more difficult. And probably nothing says "I want to catch/eat you" to a small animal more than an extremely large animal moving towards it while staring at it[8].

Once the anole is comfortable with the presence of the noose (or has not detected it), the next step is to ease the loop over the snout of the animal, encircling its head, and move the noose back to the neck region. This move should be done slowly;

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[7] I have observed local people construct an entire functioning noose out of a long blade of grass. It is humbling to be outnoosed by somebody who is noosing with a blade of grass.

[8] Imagine how you would feel if a 150 foot tall animal locked eyes with you and then came directly towards you in a threatening way. You'd run the other direction, right? Now imagine that animal is walking towards you but its gaze is focused on something else, just beyond your position. You might hunker down and hope it hasn't seen you, especially if that strategy has worked before and you have a brain the size of a pea. I'm reasonably sure those scenarios both analogize the anole's cognitive threat-evaluation process when confronted with an approaching herpetologist and describe multiple scenes from the classic TV show *Land of the Lost*.

many anoles have been lost by hasty movements at this stage of capture. After the noose is positioned around the neck of the targeted anole, the pole should be pulled back over the body towards the tail of the animal, thereby securing the loop tight around the lizard's neck. Many herpetologists jerk back abruptly to ensure a tight loop, but this step does not have to be done especially rapidly to be successful[9]. A common mistake at this stage is to pull the noose up (i.e., dorsally) rather than back (i.e., posteriorly). Pulling up may remove the noose from the anole's neck, or may fling the animal upward. Fortunately, unlike skinks and whiptails, anoles have a discrete head well set off from the neck so once a noose is tightened the anole is seldom lost. Still, it is best to remove the noose from the anole in a timely manner in order to minimize discomfort of the animal.

Noosing is most commonly done to catch active anoles during the day. Its effectiveness depends on the anole-finding ability of the nooser and the activity levels of the sought anoles. In my experience, most anole species are inactive during inclement weather such as heavy rain. Normal activity levels in anoles have been studied by several authors and seem to be population- and area-specific[10]. For example, an anole species living at 2500 meters elevation may have a single brief period of sunny time where it forages and patrols its territory, whereas lowland tropical anole species may have multiple activity peaks during a day. As ectotherms beholden to the

[9] In fact, overly rapid noose closure can have dire consequences. I once observed an anole decapitated by an overzealous lizard nooser.

[10] see for example Andrews (1971), Talbot (1979), Lister and Aguayo (1992).

environment for their energy levels, anoles can be especially hard to find during cooler periods, and especially wary and difficult to noose during the heat of the day.

Noosing is a satisfying and really fun way to catch anoles. When performed by a competent practitioner, it is an effective way to secure large numbers of common anoles during the day. However, if you want to find rare or cryptic species, and collect common things easily, you must go out at night.

When the pioneering hip hop group Whodini rapped that the Freaks Come Out at Night, they might have been referring to anoles. The great naturalist Ken Miyata, in his 1985 description of *Anolis lynchi*, noted that anoles collected at night "…have sometimes been the ones most poorly represented in museum collections; in some cases it seems as if a different anole fauna can be found at night." What Miyata and possibly Whodini realized was that strange, cryptic anoles are only seldom seen during the day, but are visible and potentially even common at night. Additional anecdotal evidence supports this view. Twenty-eight of the first 31 specimens of the cryptic and tiny anole *A. occultus* were collected by Richard Thomas at night[11]. In 2001 I spent approximately equal amounts of time day and night herping over 72 hours at Soroa, Cuba and found 27 individuals of the fantastic chamaeleon-like *Anolis (Chamaeleolis) barbatus* at night and zero individuals during the day. I have had similar experiences with several mainland forms, including rarely collected species such as *A. insignis*, *A.*

[11] Williams and Rivero (1965) note that Thomas—a legendary anole-finder--collected "more than 30 individuals" of *A. occultus*, in addition to the one specimen those authors found. Thomas (1965) stated that "all but two" of the individuals of *A. occultus* that he had collected were found at night. I've caught dozens of *A. occultus*; all of them at night.

calimae, and *A. fungosus*: hours of day herping produced no specimens, but night herping resulted in several to dozens of individuals of these species.

So how does one find anoles at night? Fortunately for herpetologists, most anoles make it easy on us. Individuals of almost all species (exceptions discussed below) sleep on leaves or narrow branches at night. The body of an anole contrasts with surrounding vegetation when illuminated at night, so sleeping individuals are easily seen when a light is shined on them (Figure 3). This being the case, the best approach to finding maximum anole diversity is to search at night with a bright light, slowly scanning vegetation for the telltale contrast of anole and twig or leaf.

Figure 3. *Anolis lemurinus* sleeping on a leaf in Belize.

But why do anoles sleep so exposed? The idea, which never has been tested but makes all kinds of sense, is that a lizard sleeping on delicate vegetation can detect when

a predator is stalking it. A predatory snake climbing a frail plant with an anole sleeping on it may shake that plant and disturb that anole. In response, the anole can drop to the ground and possibly evade the predator[12]. This approach to sleeping is reasonable according to natural selection and exploitable if you are a herpetologist seeking anoles.

Night-herping for anoles requires two tools. The most important of these is a bright light. For lights, brighter generally is better, although I seldom use my brightest light on its highest level as doing so tends to wash out the lizard-vegetation contrast in close quarters. A more focused beam is preferable to one that is diffuse, and white light (as in most modern LED lights) seems to create a better contrast than yellow light. Other desirable qualities include rechargeabilty, light weight, compact size, and hands-free usability. I have settled on high-powered lights designed for night mountain biking as best meeting these criteria. I have been satisfied with offerings by Jet, Niterider, and Fenix, but my current favorite is the XML-3 produced by Dinotte. As of this writing, a few companies offer 2000-lumen lights, and battery and charging options are myriad. Light brightness, battery life, and charging speed are technologies that develop rapidly, and any light recommendation will be obsolete within months. The "Bike lights shootout" of mtbr.com provides useful guidance, as do tech sheets at the outdoor store REI and recommendations from hunters, police, and others who rely on bright light.

The two lighting options that some anolologists favor over mountain biking lights are headlamps and focused-beam flashlights such as maglites. These are excellent choices. My reservations regarding traditional headlamps are that, first, I find it

[12] Likewise, an anole can drop and evade a clumsy herpetologist who has disturbed its perch.

preferable to use all lights, even headlamps, in hand rather than mounted on the head so the hands-free advantage of these is negated. Manipulating the light in hand rather than leaving it fixed upon head seems to allow finer distinction of anole-vegetation contrast because different lighting angles may be examined while maintaining optimal view of a potential lizard. Second, it is difficult to find a headlamp with the brightness of other light options. Flashlights can be extremely bright, and their narrow beam is highly desirable. The problem with flashlights is that it is cumbersome to hold them while attempting to secure an anole with both hands. Mountain biking lights may be effortlessly transferred from hand to mouth[13] during anole capture such that the light is directed by mouth while both hands are available to make the capture. Headlamps obviously also leave one's hands free, but flashlights require awkward shouldering or uncomfortable and suggestive mouthing to keep the hands free during anole capture.

Besides a light, the other necessary piece of equipment for night anole herping is a long pole. We have used collapsible fishing poles, retractable golf ball retrievers, and "natural" items such as saplings for this purpose[14]. The function of the pole is to knock the sleeping anole off its perch so the lizard may fall and be secured[15]. Ideally, the anole is caught out of the air after being knocked down, but if missed the anole may be grabbed from the ground. It is important not to pursue anoles too chaotically if they hit

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[13] Unhygienic, I know, but this actually is our standard sequence for securing anoles: find an anole using a light in hand; transfer light to mouth while continuing light direction towards anole; grab anole using both hands.

[14] We have used lots of poles for anole work, but our fallback pole for length, stiffness, portability, and reliability is the 20 foot B'n'M Black Widow retractable panfish pole.

[15] Coloquially, the practice of knocking an anole down off its perch and catching it is called a "shake and bake." The term originated with Erik Hulebak in 2003.

the ground after being knocked down. Anoles usually do not flee, but rather tend to freeze after falling. The pole may include a noose on its distal end, and this noose may be used to pull down a sleeping anole in the same way noosing is done during the day (see above). Night-noosing often is difficult with small anoles that sleep flush with twigs such as *Anolis orcesi*.

There are exceptions to the norm of anoles sleeping on delicate vegetation. A few saxicolous forms such as *Anolis gadovi* may sleep on boulders in addition to vegetation, and individuals of many semiaquatic species sleep on rock surfaces bordering or within streams. In some of these species (e.g., *A. aquaticu*s, *A. barkeri*), individuals commonly sleep in rocky splash zones, seemingly oblivious to the splattering cacophony surrounding them (Figure 4). Although most diurnally terrestrial anoles sleep in the traditional anole manner on leaves and twigs, some, such as *A. tropidonotus*, appear to sleep in leaf litter[16]. Perhaps most unusually, *A. alvarezdeltoroi* has been observed sleeping deep within caves, on cave ceilings over 10 meters up (Fig. 5). Notwithstanding these unusual cases, I estimate perhaps 95% of anole species sleep on twigs, branches, saplings, and/or leaves. Targeting the other 5% may require unusual approaches, and the species accounts will give some guidance here. But in general, if anole diversity is the goal, it is best to focus on leaves and twigs at night.

[16] I have inadvertently kicked up numerous *A. tropidonotus* and *A. uniformis* from leaf litter while herping for anoles at night, which suggests to me that these species sleep in these microhabitats.

Figure 4. *Anolis barkeri* sleeping on a boulder in a splash zone of a stream, Mexico.

Figure 5. *Anolis alvarezdeltoroi* sleeping on the ceiling of a cave, Mexico. The individual is approximately 10 meters up from the cave floor, and 20 meters from the nearest obvious cave entrance.

Noosing and spotlighting are the commonest means to catch anoles, but there are other techniques. Rodrigues et al. (2002) used sticky trays attached to tree trunks to trap the rarely collected anole *Anolis phyllorhinus*. Several researchers have used blowguns or guns filled with scattershot to procure lizards[17], and presumably these techniques would work on anoles. Several "exotic" anoles have been observed to be nocturnally active, noosable, around artificial lights. I have very occasionally found anoles under rocks (e.g., *A. armouri*) or bark (e.g., *A. cybotes*), or esconced in hanging moss (e.g., *A. quercorum*). But these behaviors do not seem to me to be common for most species in most areas[18].

In addition to searching in nonstandard areas for anoles, it is sometimes fruitful to engage the help of others. During the heyday of Ernest Williams and Albert Schwartz[19], "lizard markets" were commonly employed in the Caribbean to accumulate anoles. Researchers would enter a rural village and set up an impromptu anole bazaar for children and adults to receive coins in exchange for specimens. Prices were fluid and set according to demand. At first, one peso would be offered for any lizard, resulting in several individuals of whatever anole was most visible (usually, the local "trunk-ground" anole, e.g., *A. cybotes*). The appearance of anything new (say, a green "trunk-crown" anole like *A. chlorocyanus*) was paid with two pesos, and so on. If a rare species came in (say, a "twig" anole like *A. sheplani*), a five-peso bounty might be offered. This approach

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[17] see e.g. Pianka (1994).

[18] It seems that searching these places would work well for particular anole species in special situations.

[19] Williams and Schwartz and their associates herped the hell out of the Caribbean in the 1960s , 1970s, and 1980s, resulting in classic works such as Schwartz and Henderson's (1991) guide to Caribbean herps and Williams' (1976a) landmark summary of anole taxonomy.

resulted in huge collections of common species and was sometimes but not always effective for securing rare species[20]. My experience with enlisting local people to help find anoles is that you need to find the right person--the local naturalist if you will--for this approach to be successful with rare species. I have had local people surprise me with remarkable species of anoles I did not expect, and also I have shown local people species they had never seen before even though they lived in close proximity to them.

The reliable and tested approaches of noosing and spotlighting are commonly used for good reason. Perhaps some new technique will come along to revolutionize anole herping and supplant the usual techniques[21], as night herping did. But until that time, if you want to find a lot of interesting anoles I recommend getting a bright light and a long pole, training your eyes, and staying out until the sun comes up.

Executing a field trip to collect anoles

Once an anole fauna is studied, equipment is accumulated, permits are obtained, and techniques are understood, the trip itself proceeds according to principles of *specialization* and *targeting*. Specialization refers to my lab's focus on anoles rather than other species or general herp collecting. As explained above, we herp for anoles almost exclusively at night because that approach yields the highest payoff in terms of rare

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[20] Harvard's Museum of Comparative Zoology, where Williams famously was curator, houses 3541 specimens of *A. cybotes* and seven of *A. sheplani* as of this writing.

[21] I'm hoping for a Star Trek-like tricorder that is keyed to particular DNA sequences so specific anole species can be detected. I'd also like a dog voice translator and an invisibility ring.

species and anole diversity. Targeting refers to our pursuit of particular, usually rare species, with the assumption that other commoner species will be collected as bycatch during the course of the trip. For example, in our first trip to Ecuador, we targeted the (at that time) rarely collected anole *Anolis proboscis* by visiting Mindo, the only area where that species has been collected. While searching for *A. proboscis*, we also collected multiple individuals of the common Mindo species *A. gemmosus*, *A. aequatorialis*, and *A. fraseri,* which obviated making a special visit somewhere else to obtain these species. As a trip proceeds, the target list may change as some species thought to be common turn out to be difficult, and some rare species may be found in an unexpected area.

During the course of a trip, we usually will stay at a location only long enough to collect the targeted anoles from that location. We may stay at field stations or "ecohotels" that allow convenient use of trails through good habitat. We also frequently spend our nights driving, making stops and searching at areas along the road that seem likely to harbor anoles. This latter approach can be a highly efficient way to collect a lot of anole diversity in a single evening, for example by driving an elevational transect from sea level up to 2000 meters and stopping to herp at several different elevations along the way.

We often will search for desirable anole habitats during the day as preparation for herping those habitats at night. The best habitats in which to find anoles are not necessarily the habitats considered to be most "natural." Intact old growth forest with hiking trails is desirable and must be herped when available—after all, anoles obviously

evolved in and lived in "undisturbed" areas before humans came along. But it often is difficult to see anoles in such areas due to habitat complexity, canopy height, and trail overgrowth. Multiple times, I have had the experience of hiking hours through apparently pristine natural habitat and finding few anoles, then herping an adjacent disturbed area such as a roadside and finding several anole species quickly. The success of herping disturbed areas is not limited to common species, either. I have not found any species of anole to require undisturbed forest to survive. In my view, the most productive areas to herp for anoles are disturbed areas near pristine areas. Edge habitats such as roadsides, fields at the margins of forest, or streams through agricultural areas that are bordered by a few meters of adjacent trees, are especially good. Of course, certain species such as semiaquatic and saxicolous forms have very specific habitat needs, and these are discussed in the species accounts.

Habitats and regions vary greatly in anole abundance, and it can be difficult to anticipate the abundance of a particular area before visiting. Anoles are famously common on Caribbean islands, but can seem frustratingly rare at many mainland sites. A seasoned anole collector might find dozens of anoles per hour in El Yunque park in Puerto Rico, but only a handful per evening while herping Panama's El Copé park. Fortunately, anole abundances in some highly human-affected mainland areas can approach island abundances[22]. Planted hotel grounds, golf courses, and city parks are prime and often convenient locations for observing large numbers of anoles.

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[22] Strongly human-affected areas with island faunas are perhaps the ultimate places for anole abundance. In my experience, rates of anole collection in Disney World hotel parking lots can approach one individual per minute.

A normal day during one of our trips to collect anoles starts with the group waking up during the afternoon, hopefully no earlier than 2 or 3 PM. We spend the late afternoon preparing for the evening's herping: ensuring the health of previously collected specimens, making final mapping preparations for the evening's localities to be visited, buying provisions, searching for habitat, and discussing plans. As the sun goes down, we will have a large meal—generally our only one of the day—before proceeding out for the night's anole herping. We generally herp for anoles from sunset to sunrise, fueled by snacks and the fun and excitement that comes from finding anoles. It can be hard to stay up all night, both mentally and physically. The carrot-goal of reaching sunrise often enables hours of labor beyond what may be considered a normal work effort[23]. As I have emphasized in this chapter, efficiency is key for collecting anole diversity. But also, as in any endeavor worth pursuing, success in anole herping is sometimes a matter of just putting in the time.

[23] Depending on one's motivational makeup, caffeine, sugar, or rum also may help.

Table 1. Accessible mainland locations at which several species of anole may be collected. Each locality is a small area, that is, all observed species may be collected within a kilometer or so from the listed gps point. "Species observed" list documents the species collected by my lab during one to several nights focused on finding anoles. The addendum *cf* means "compare to" (latin, confer), which indicates my suspicion that the species listed is probably undescribed but similar to the listed form. For example, "cf *altae*" refers to a potentially undescribed species that is similar to *A. altae*. "Additional present or nearby species" refers to species we or others have collected in the area of the listed locality.

Locality	Description	*Anolis* species observed	Notes on additional present or nearby species
All American Park, Florida, USA	City park with planted vegetation; 25.707 lat, -80.298 lon, 2 meters	*carolinensis, cristatellus, cybotes, distichus, equestris, garmani*	*Anolis chlorocyanus, A. extremus, A. ferreus, and A. porcatus* have been recorded from other areas in Florida.
2 km North of La Chinantla, Veracruz, Mexico	Sap groves and other disturbed areas near limestone; 17.298 lat, -94.454 lon, 95 meters	*alvarezdeltoroi, compressicauda, lemurinus, rodriguezii, unilobatus*	*Anolis barkeri, A. biporcatus, A. beckeri,* and *A. pygmaeus* have been caught nearby.
Cusuco National Park, Copan, Honduras	Trails through primary and secondary forest from the visitors' center, and areas along the park road and the	*amplisquamosus, cusuco, johnmeyeri, ocelloscapularis, petersii*	Several additional species can be caught on the drive up to the Cusuco visitors' center from Cofradia: *A. biporcatus, A. capito, A. lemurinus, A. rodriquezii, A.*

	grounds of the visitors' center; 15.497 lat, -88.212 lon, 1530 meters		*tropidonotus, A. unilobatus, A. uniformis, A.* cf *yoroensis.*
Las Cruces, Puntarenas, Costa Rica	Trails through primary and secondary forest, and planted botanical garden; 8.7858 lat, -82.960 lon, 1200 meters	*aquaticus, biporcatus, limifrons, capito, kemptoni, polyepis, savagei, woodi*	Higher elevations northeast of San Vito have produced *A.* cf *altae, A. benedikti, A. pachypus,* and *A. salvini*. *Anolis microtus* should be there as well.
Parque Omar Torrijos, Cocle, Panama	Trails through primary and secondary forest in park, and altered areas along road in park; 8.668 lat, -80.593 lon, 780 meters	*biporcatus, brooksi, capito, elcopeensis, frenatus, humilis, ibanezi, kunayalae, limifrons, lionotus, vittigerus*	We found *A. pentaprion, A. gaigei,* and A. *auratus* at lower elevations along the road from the Pan American highway to the park.
Villas de Pianguita, Valle de Cauca, Colombia	A highly human-affected area including hotel grounds and disturbed forest behind the hotel; 3.840 lat, -77.197 lon, 5 meters	*anchicayae, auratus, chloris, granuliceps, latifrons, lyra, maculiventris, parvauritus, purpurescens*	We found *A. notopholis* and *A. macrolepis*, within 20 miles of Pianguita in similar habitat
Rio Palenque, Pichincha, Ecuador	Trails through primary and secondary forest in reserve, and highly disturbed adjacent surroundings; -0.588 lat,	*chloris, fasciatus, festae, gracilipes, lyra, maculiventris, parvauritus, peraccae, princeps*	We found *A. lynchi* just north of Rio Palenque, and the type locality of *A. parilis* is at or near Rio Palenque.

	-79.363 lon, 180 meters		
Madre Selva, Loreto, Peru	Trails through primary and secondary forest from the Madre Selva field station; -3.615 lat, -72.234 lon, 100 meters	*bombiceps, fuscoauratus, ortonii, punctatus, scypheus, transversalis*	This complement of anole species is common to many lowland Amazonian localities.