

HISTORICAL PERSPECTIVES

The Iguana

Iguana iguana iguana (L)¹

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The following observations on the iguana were made during a two year stay in Panama: in the tropical forest vicinity of Pacora, in the sabanas around La Chorrera and in the various habitats found within the Canal Zone.

Terminology

The name iguana is the only one that I have heard used for this lizard by English speaking people, with the exception of show people in the United States who sometimes use more spectacular terms, such as "dragon." In Central America the Spanish-speaking people usually call the female *iguana* and the male *gorrobo*. The male is sometimes called *ministro* in El Salvador, and *guacho* in Costa Rica. The young, of course, is called *iguanita* or *gorrobito*. In Panama the lizard is facetiously called *gallina de palo*, "chicken of the tree." Most Americans consider any small lizards in the tropics iguanas, ameivas and basilisks in particular, just as they call almost any tree a mahogany tree.

Sexual Dimorphism

Males of this species show quite a variety of color; their heads vary from whitish, grayish, pinkish, to orange and black. The males in general have more orange and yellow coloring than the females, which are lighter colored and more greenish. Females are usually smaller than males of the same age, and the head is smaller in proportion to the body. The dorsal spines are shorter in the female, being from one-half to one inch in length, while those of the male are two inches or more. The male has a row of glands on the underside of each thigh. Externally they appear as disc-shaped, warty excrescences; just beneath the skin they are spherical in shape and measure from four to six millimeters in diameter. One male had 17 on one leg, 18 on the other.

There is a belief in El Salvador that these glands are warts. It is believed that a person can get warts from the blood of an iguana, unless it is washed off before it becomes dry. I have asked Salvadoreans why warts were common in the United States, where there are no iguanas. I was told that they could be acquired from inadvertently coming in contact with urine from a person having warts. When I asked how they explained the fact that children had warts more commonly than adults, I was told that they were transmitted through the mother. When told about the myth prevalent in the United States, that handling toads caused warts, they were not familiar with this belief, and denied vehemently that toads would cause warts.

Male iguanas either outnumber the females, in adults, or are more conspicuous in their habits. On one trip I collected seven males to one female. Possibly among the older population, more males survive predators than the smaller females.

Habitat

The iguana is quite arboreal in its habits, but it is also at home on the ground. It is an excellent swimmer and takes voluntarily to the water to escape its enemies. I have never observed adults very far away from trees, although the young will wander quite a distance from them. They are particularly numerous in trees overhanging rivers, or perhaps they are more easily observed from the water. During cold, wet weather, they seem to prefer to stay on the ground, probably for greater warmth afforded by ground cover, such as brush, hollow logs, holes, etc. On one collecting trip, after a prolonged cool and wet period, I observed no iguanas in the trees. Then the sun came out, and as it rapidly warmed up, iguanas were noticed coming to the tops of bushes and ascending into the tops of trees. In favorable weather, they apparently spend most of the time in the trees and even sleep there overnight.

I once watched an old male, in a big fig tree near Gatun, for several days. The tree was more or less isolated from others, and as the iguana had an unusual reddish color to its head, I felt reasonably sure that it was the same specimen. I could see him from quite a distance, but when I came beneath the tree, he tried to keep a branch between us. I first noticed him on September 20. On the 21st I was working in the same locality and observed him every time I looked for him, from 7:30 a.m. until 2:15 p.m., when I left. On the 22nd I couldn't locate him. On the 23rd I saw him at 8 a.m. That day, while I was away eating my lunch, some of the men in my crew of laborers entertained themselves by catching this iguana for me. They had not known that I was watching it, and thought I'd be pleased with it.

Another large male was conspicuous in a big ceiba tree at Fort Davis. It was late in November, and the tree was bare of leaves. The new leaves were coming out and the iguana was feeding on the new shoots. This lizard remained in the same tree for at least four days.

Their choice of trees is based mostly on the food available at the time, as they probably select the species according to the season of new shoots, flowers, fruit or leaves. Apart from the feeding angle, they seem to prefer heavily foliated trees when the sun is bright, and when it is raining, more open trees are preferred, such as the wild fig. Species to which they seem particularly partial are the wild plums, *Spondias* species; the palo bobo, *Erythrina glauca*; the guacimo, *Luebea seemannii*; the wild cashew, *Espave*

¹ Originally published in *Herpetologica* 6:187-193 (1950). Reprinted with permission. Bracketed names were added and one typographical error corrected.



A Central American Green Iguana (*Iguana iguana*). Photograph by Robert W. Henderson.

excelsum, to mention a few. They are liable to be found on almost any tree, however, even small species like the *Cecropias*.

I once saw two iguanas we had shaken from a tree run into an armadillo hole to escape capture. When frightened from a tree growing on the bank of a river, they prefer to jump into the water rather than on land. They usually swim under water and come up under brush along the shore line, if such is available. A jump from a tall tree doesn't seem to hurt them. I've seen them leap from heights of forty or fifty feet and apparently land unhurt. Some times their tail is broken by intervening branches, or brush, but even if they hit practically bare ground, it takes a "flying tackle" at the moment of contact to capture one before it runs away.

Very young iguanas are frequently seen on the ground, sometimes in open areas, and they are probably terrestrial to a large degree. I have never seen one under ten or twelve inches in a tree, although smaller lizards would naturally be more difficult to observe there than on the ground. (I have observed many small lizards of other species in trees, however).

Locomotion

Iguanas are very agile climbers. I once observed a specimen climb the underside of a fairly large and smooth limb. They attempt to keep a limb between them and an observer, in the manner of a squirrel. Sometimes they will go from one tree to another, if the branches are interlaced, and I have seen them make short jumps from one tree to another. In leaping to the ground or to the water

from a tall tree, they hold the legs closely to the body in flight. I have not been able to verify how they break their fall, but it would seem that they would have to extend the legs, and that they might use the tail to some extent. While the tail isn't so brittle as that of most lizards, one frequently captures specimens with part of the tail regenerated.

At rest in a tree, they sometimes sprawl out parallel to a limb with the hind legs dangling over into space, not even the claws being in contact with the limb.

In swimming, an iguana lets its four legs hang limply against its side, and propels itself with powerful strokes of the tail, much like a crocodilian. I have never seen one swim on the surface; they were always submerged.

Once I released an iguana on an open grassy area. At first it wouldn't try to run away, so I left it for about an hour, and when I returned it had started to walk. When it saw me, it began to run, but I overtook it easily, when it again became quiescent. Although this specimen traveled not more than seven miles per hour, I believe that an undisturbed adult could probably attain a speed of ten or twelve miles per hour for a short distance.

Food Habits

One of the favorite foods of the iguana in Panama is the wild plum, *Spondias mombin*. The fruit is about 1 1/4 to 1 1/2 inches in length, by about 3/4 inch in diameter, shaped somewhat like a prune, and containing a large pit. It ripens over a long period in August and September. Of seven iguanas I dissected on

September 2 (1943), five of them contained plums: 16, 29, 39, 41 and 79, respectively. The one with 16 plums also had many leaves in its stomach, the others very few. One other contained leaves and seeds of the guacimo tree. The only female of the seven contained no plums and only a few leaves, but a great many seeds, which my woodsmen identified as fig seeds, although one of them disagreed and insisted that they were seeds of the canillo, *Miconia argentea*.

Other iguanas dissected contained fruit of the pepenace, *Ximena americana*, and mango leaves. I have observed them eating the leaves of the morning glory, *Ipomoea* species, and new shoots of the ceiba, *Ceiba pentandra*. They undoubtedly eat many different species of leaves, blossoms, buds and fruit. Native Panamanians and Salvadoreans claim that they frequently eat leaves from vegetables in gardens. Several natives claimed that they had seen iguanas, not once, but a number of times, eat human excrement. In captivity I have had them eat ripe bananas.

Very young iguanas are probably almost entirely insectivorous², but I have made no personal observations on their feeding habits. I find no mention of stomach stones in my notes, nor do I remember finding any.

Mating

I have not observed iguanas in the act of mating. One of my workers saw a pair mating in El Salvador. If he remembered correctly it was in October. They were closely intertwined and upon the ground. Another claimed that they mated in November at the close of the winter (rainy season). It is very likely that mating takes place upon the ground; if it took place in trees it would be more often observed. Many of my men were excellent woodsmen and observers of nature, but few had ever seen iguanas mating.

Egg Laying

The eggs are laid from early February to March. They are spherical in shape and have a white shell, about 30 mm. in diameter. One informant told me that they are laid on the ground and covered with dirt. They probably hatch in about three months. (Young iguanas are commonly seen from June on). The number deposited varies greatly; there may be as few as twenty or as many as seventy. A specimen dissected on a September 26 contained 72 eggs, varying from 3 to 6 mm in diameter; the total number probably represented more than one clutch. Another examined on a November 21 contained 28 large eggs, of about 15 mm. in diameter, and many that were much smaller. Late in January the eggs are about 25 mm. in diameter.

Growth

Young iguanas are observed most often in June and July. A native observer said that they reached a length of about three feet at the end of their first year. This sounds reasonable, as in June or July most specimens seem to be under ten inches or over three feet in length. They probably attain full size in two years. Older specimens seem to become thicker in build but do not grow much in

length. A specimen five feet in total length, and weighing about ten pounds, may be considered large. The largest specimen of many hundreds that came to my attention was caught at Fort Gulick, Canal Zone. It weighed 13 1/4 pounds, and measured 66 1/2 inches in total length, 4 inches of the tail having been regenerated. With a normal tail it would not have been more than an inch or two longer. The snout to vent length was 20 1/4 inches. I have not seen wild ones (at large) that I thought were any larger than this specimen.

Frequency

Iguanas are very common in many places where they occur. In a hunt for them near Margarita, Canal Zone, on a September 26, I personally observed 39 specimens in two hours; of these my five helpers caught 8. They undoubtedly saw many more that I did not. That afternoon I observed 20 more, although I was not hunting for them then.

Between Margarita and Gatun, while driving slowly along the road one morning shortly after sunrise, I counted 58 iguanas sunning themselves on the tops of trees, within a distance of three miles. It is not unusual to see four or five in a tree. We once routed 12 iguanas from one fig tree, *Ficus glabrata*.

Enemies

Many iguanas are marked by bad scars. According to the natives, most of the scars are the result of attacks by hawks. I have no reason to doubt this, as hawks are very numerous in the tropics, and the iguana's habit of basking in the tops of tall trees would make it very logical prey. The fear of hawks is the basis of a stratagem for catching iguanas. The native whistles or screams like a hawk, which "freezes" the lizard and makes it easier to capture. I can not vouch for this personally, but I do not discredit it, as when frightened badly enough, an iguana usually remains motionless.

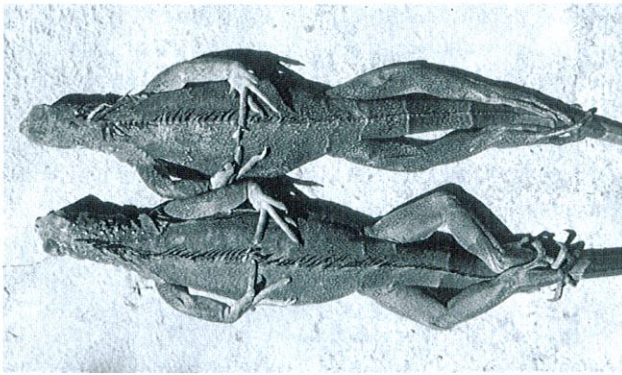
Boas and other snakes undoubtedly eat many iguanas. Small snakes are capable of eating young specimens. We once caught a boa, *Constrictor c. imperator* [= *Boa constrictor*] of only six feet in length that contained an adult iguana. It was a big meal for the snake, and the tremendous bulge it made in his body rendered the capture of the snake very easy. I have no records of predatory mammals attacking iguanas, although I see no reason why they should not.

Defense

The iguana's chief defense against its enemies is probably its ability to climb, run, and swim. Its protective coloration is an aid in escaping the notice of many potential enemies. It is amazing how inconspicuous it can be. I have talked to people who have lived in the Canal Zone for two or three years without having noticed a wild iguana, although they are present in large numbers in many parts of the Zone. Once when on a hunt, five good *campesinos* and myself could observe but three iguanas in a guacimo tree. A couple of the boys climbed it, and frightened ten iguanas to the ground.

Their keen vision helps them to avoid enemies. On an open sabana, one gave evidence of having seen me while I was still 100 yards away. I have tried to approach them in trees close enough to photograph, but could seldom get within 25 feet of one before it would leap to the ground.

² Editors' note: Green Iguanas of any age are herbivorous. Accounts of insectivory are due to incidents induced in captivity and should not be used to justify feeding meat or insects to captive Green Iguanas.



Green Iguanas still appear regularly at Central American markets. *Photographs by Gunther Köbler.*

Usually a captured specimen offers no resistance. If it is released and teased, it sometimes puts up quite a show of angry defense. Some of my men once caught and released an iguana, unknown to me. I came upon it, thinking it a wild one, and when I got close enough, it lashed out with its tail, striking me on the side of my thigh between the knee and hip. It raised a welt which lasted several hours. It also threatened to bite. I took it into a cabin and thrust a broom at it. The lizard struck at the broom with his tail, then bit at it savagely, taking off part of the straw. Another specimen, trussed up in the usual Panamanian manner, managed to get its front legs loose and bruised one of my companions arms with its tail. Wounded specimens are much more likely to fight than uninjured ones. Some natives claim they can make a good account of themselves with a small dog.

Commercial Value³

Iguanas are a source of meat for a great many tropical American people. Their use as food seems to be confined to the areas where they are indigenous, as they are seldom transported from the lowland tropics to the cities at higher elevations where the iguana does not occur. Most natives of Central America who live where iguanas occur consider them excellent food. The Jamaican negroes who worked for me in the Canal Zone could hardly conceal their disgust at people eating lizards. Some of the highlanders of Central America feel the same way. Personally, I think they are delicious.

Unlike most animals, old specimens are better eating than young ones, perhaps because they are not so agile, resulting in softer muscles than in young, active specimens. Their diet probably affects the taste also, as younger individuals may not have completely overcome the insectivorous habits of their infancy. Possibly when feeding on fruits they have a better flavor than when feeding on leaves and other vegetation that would impart a flavor less palatable to humans. In the dry season they are not as good eating as in the rainy season. One I cooked for three hours in July remained tough and not very tasty. Just after egg laying, in March, to about July, they are at their worst. They are usually considered at their best in September and October. Many

writers have mentioned tasting the flesh of the iguana and finding it unpalatable. In such cases, they have either let their imagination get the best of them, have tasted them at the wrong season or have tried too young a specimen. I have eaten many of them and find them delicious — equal if not superior to chicken.

Their eggs are also considered a delicacy. I have eaten them taken from an iguana and boiled. To me they tasted much the same as the hard boiled yolk of a hen's egg, and had much the same appearance. The natives also eat them dried, as sort of a confection.

The market value of iguanas varies much from country to country. In Panama, in 1943, at the market in Panama City, a large female with eggs sold for about \$2.00 (males slightly cheaper). At the same time, the best class of fish retailed for about 32 cents per pound; chickens 60 cents live weight and 70 cents dressed. Such an iguana would weigh 8 to 10 pounds. Turtle steaks were 30 cents per pound.

In El Salvador at the same time, a similar iguana sold for the equivalent of 30 cents to 40 cents U.S. In Nicaragua they could be bought for as little as 15 cents U.S.

Eggs of the iguana sold in Panama City at 7 for 10c and in Cartagena for as little as 4 for 1c U.S. In Barranquilla, a string of 50 was sold for about 25c U.S.

The iguana is a particularly convenient source of meat in hot places, as it can be kept alive for a long period without food or water. In Panama it is the custom to fold the legs over the back, securing them by slitting the skin of the toes and placing a claw of one foot through the tendons of the toes of the opposite foot, and twisting them. This renders the iguana helpless. In Panama City one may see dozens of them lying in the street of the market place. I am told that in Venezuela the natives simply break the iguana's back to keep it more or less immobile.

I do not recall having heard an iguana voice a sound of any kind. However some of the mestizos who worked for me told me of an occasion in which an iguana caused much excitement among the sight seers who flocked off a boat at Cristobal. The big lizard, held by a Panamanian, made lots of peculiar noises, whistled and "talked." An excited gringo thought that he had made a wonderful discovery for some zoo, and convinced the Panamanian to part with it for the measly sum of \$10.00. Of course it was a trick of ventriloquy.

³ See also "A backward glance at iguana exploitation" (IGUANA 10(3):63-66).

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Grand Cayman Blue Iguana, *Cyclura lewisi*, Grand Cayman, Cayman Islands (see story p. 148). Photograph by Fred Burton.