

THE CAPTIVE HUSBANDRY AND PROPAGATION OF THE CUBAN ROCK IGUANA *CYCLURA NUBILA* PART 4. BREEDING

BY ROBERT W. EHRIG

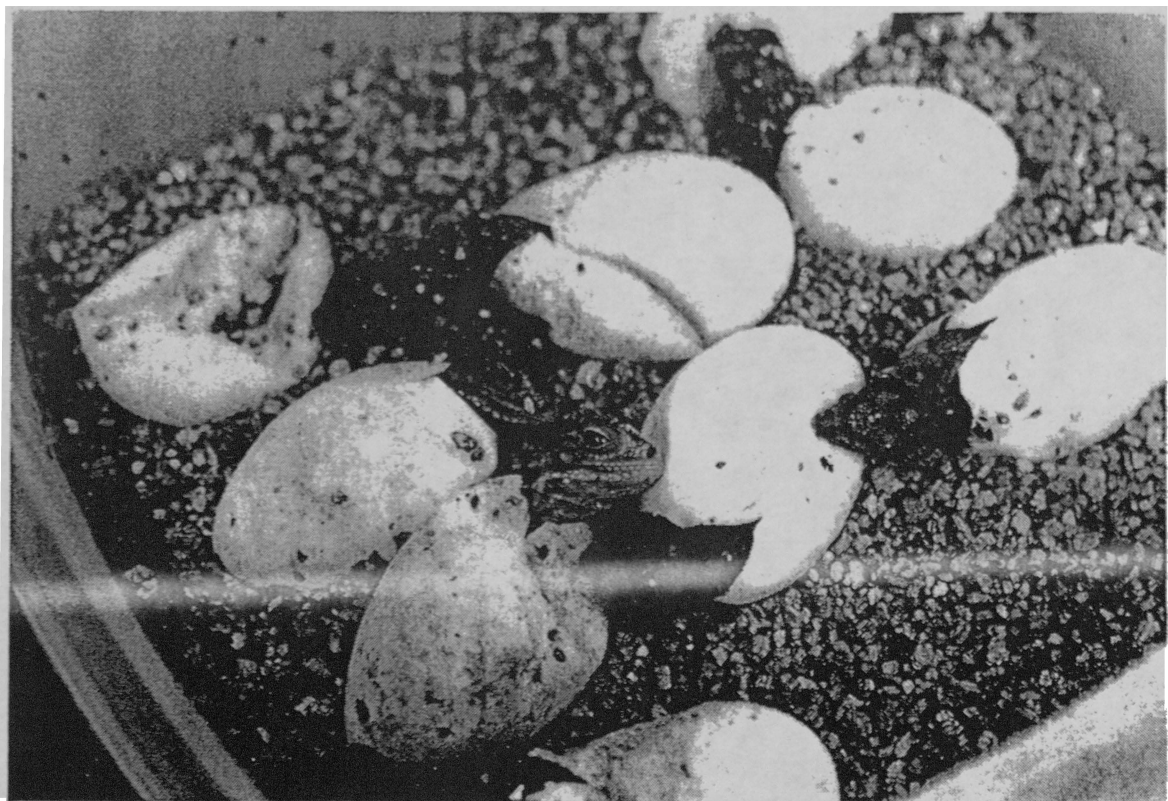
The Cuban rock iguana, *Cyclura nubila*, the largest member of the genus, is probably the most adaptable species of iguana in a captive environment. Except for very rare breeding of other species (*C. ricordii*, Indianapolis, *C. cornuta*, Washington DC), it is the only *Cyclura* that has been bred by temperate-zone zoos. Only in the last decade has iguana husbandry reached the level of sophistication where reproduction occurs with any regularity. If iguanas are properly maintained in pairs for a period of years breeding activity should be expected.

I believe the main reason for the lack of success in captive propagation of iguanas is insufficient space. The essential elements for captive propagation are:

1. Space (70 sq. ft.-150 sq. ft. or more per adult pair of iguanas)
2. Appropriate photoperiod

3. Good diet (see *I.T.*, Vol. 1, Numbers 5 & 6)
4. Sufficient ultraviolet light
5. Nesting area (area in which to construct a nest), or a nest box
6. Comfortable social situation (not crowded)

The photoperiod is the most important environmental cue for synchronizing the reproductive cycle of the Cuban iguana. All *Cyclura* are subject to yearly cycles of change in day length. These changes in the hours of daylight are what initiate breeding activity in iguanas. Much of our success with breeding the Cuban iguana at Finca Cyclura is due to our location at 24°6'N only 100 miles from the north coast of Cuba. Exposure to unlimited ultraviolet light in a climate almost identical to the lizard's natural habitat has allowed consistent reproduction.



Hatching of Cuban Rock Iguana, *Cyclura nubila*. Photograph: R. W. Ehrig

Iguanas kept outdoors in subtropical areas during the warm seasons of the year seem to be able to reproduce successfully. The photoperiods of southern California, Arizona, Texas, and central and south Florida all seem to be similar enough to their native ones to initiate breeding activity. Iguanas must be insulated against the extremes of temperatures both high and low in these areas. Extreme high temperatures (95°F and higher) for extended periods seem to lower fertility considerably in Cuban iguanas.

Sex Determination

The male Cuban iguana is much larger than the female in both overall size and in body proportions. This is fortunate since the differences in the femoral pores of the male and female are very slight. The bulge of the hemipenes at the underside of the male's tail is not as readily apparent as it is with an adult *Iguana iguana*.

Breeding

Courtship and breeding activity take place for a two week period in late April and early May. Both sexes flush with a brownish orange color. They are exceptionally attractive at this time. This orange coloration appears to be a trait of the animals that originated from the colony on Isla Maguëyes, Puerto Rico. Males will display frequently and are attentive to the female. We have fewer problems with the male Cuban iguanas becoming overly aggressive at breeding time than we do with green iguanas. Copulation usually occurs in early May. The male will grasp the female at the nape of the neck and twist the rear of his body under her. Actual copulation only lasts 1-3 minutes. All iguanas usually form pair bonds when kept together for long periods of time. Cuban iguanas are more polygamous than any other of the iguana species that we breed, and they seem more adaptable than other species in accepting a new mate. We have paired one female Cuban iguana with three different males in four separate breeding seasons. In all cases the transition between mates was uneventful, breeding was successful, and fertility rates were high. Only after she laid eggs were social situations stressed and then in the form of female to male aggression. Rhinoceros iguanas, *Cyclura cornuta* in the same

situation will not accept a new mate so readily. In fact, male rhino iguanas will sometimes terrorize a new female so much that she must be removed for her own well being.

Nesting and Egg Laying

About 5-6 weeks after breeding, female Cuban iguanas will initiate nesting behavior. By this time the female will appear gravid. Her abdomen will be distended and she will start to lose weight visibly in her tail and pelvic area. Gravid females eat less food than normal and then cease all feeding about 2-10 days before laying. This pre-laying fast presumably allows the last bit of growing and development of the eggs to take place before the actual laying. Females are especially susceptible to dehydration at this time and water should always be available to them.

We do not keep water containers in Cuban iguana enclosures since they are fed daily and do not usually drink. However, prior to egg laying water is offered to gravid females and they will drink. Gravid females will become restless and agitated. They will pace around their enclosure and begin to dig in the sandy areas. They will excavate a burrow in a sandy area that receives full sun for most of the day. Our enclosures have sandy areas on the southern sides. They are surrounded by rocks and boulders and the sand is 14-24 inches (35-60 cm.) in depth. This accommodates the female by simulating the area where she would nest if she were in the wild. She excavates a burrow 18-36 inches (45-90 cm.) long which ends in an egg chamber large enough for her to be able to turn around in. The burrow is just wide enough and high enough to accommodate the size of the female. The egg chamber is slightly lower than the tunnel and always has an airspace over the eggs. The female will often stay in her nest until she is ready to lay. Our Cuban iguanas have always laid in the early morning or early evening, in a dim light situation. The clutch is laid in 45-96 minutes. The female will cover the opening with sand, sometimes moving sand from all around the nest into a mound over the opening. We will offer the female food at this point, which is usually accepted. Females are almost always very exhausted but will guard their nest vigorously. I have spent many a June evening on my

hands and knees playing iguana midwife, but the process is much harder on them than on me.

If a large area of sand is not available to a nesting female she may accept alternatives. We have had some success with wooden nest boxes. A plywood or cedar box 12 inches wide, 8 inches high, and 24 inches deep (30 cm., wide 20 cm., high and 60 cm., deep) has been acceptable to females of three different species. The nest box may be sunk in the ground or placed under the lighting system in an indoor situation.

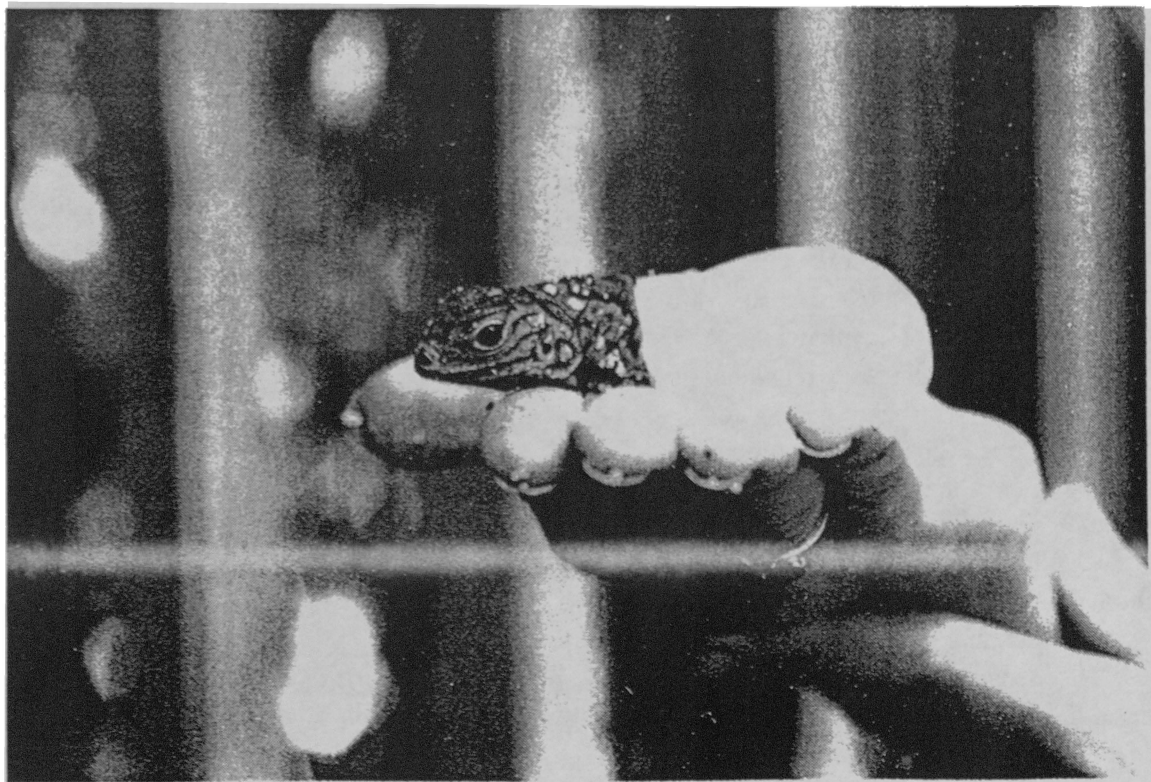
After the eggs are laid they are placed in large Tupperware® containers on a bed of slightly moist perlite or vermiculite. The eggs are placed with the side up as they are laid. They are moved indoors to be incubated. Ideally we remove the eggs as the female lays them. This prevents us from having to dig up the nest and possibly upset the female. The female will guard the nest regardless of the presence of eggs. We have had females guard nests for 1 week (*Iguana iguana*) to 3 months (*Cyclura nubila*). A Cuban iguana laid eggs in her burrow that was used year round as a retreat. She filled it in and mounded it, guarded it for three months and dug it open 3-5 days after the neonates had hatched

indoors. She performed this identical behavior for three consecutive years. In 1992 she dug her nest in another location and neither guarded so long (4-5 weeks) or opened the nest.

Fertile eggs are full, firm and white. Infertile eggs are soft or jelly-like and may be discolored. Eggs should be placed so that they do not touch each other during incubation. If one was to spoil it would not affect the others. Infertile eggs will usually deteriorate in several weeks or less. They will collapse and mold will grow on the shells. Eggs should be incubated at 87-88°F (30°C). Extra moisture that beads up on the bottom of the lid of the egg container should be blotted up with tissue. When in doubt, it is better for the eggs to be too dry than too wet. We have never lost an egg for being too dry.

At Finca Cyclura we do not use incubators to hatch iguana eggs. Since we are at the same latitude as several iguana species we are able to incubate in a room that is not cooled at all. Temperatures fluctuate between 83-93°F as they do in the wild and we have had excellent results. ☘

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Hatching of Cuban Rock Iguana, *Cyclura nubila*. Photograph: R. W. Ehrig

Reproductive Statistics for Two Cuban Rock Iguanas *Cyclura nubila*

Tasha Yar

1989	<i>Sire: Tan</i>	
	3 eggs laid	5 June, 1989 at 7:00 a.m.
	3 eggs hatch	1 September 6:30 a.m. - 3 September 6:00 a.m.
1990	<i>Sire: Raul</i>	
	7 eggs laid	17 June, 1990 at 7:30 a.m.
	8 hatch	7 September 1:00 p.m. - 12 September 10:00 a.m.
	<i>(Note: 1st hatchling died 8 Sept. but 1 egg contained twins)</i>	
1991	<i>Sire: Vinnie</i>	
	11 eggs laid	20 June, 1991 at 7:30 a.m.
	9 eggs hatch	10 September 1:00 p.m. - 15 September 10:00 a.m.
1992	<i>Sire: Vinnie</i>	
	10 eggs laid	27 June, 1992 at 7:00 p.m.
	10 eggs hatch	13 September 7:00 a.m. - 16 September 8:00 a.m.

Kaylar

1989	<i>Sire: Worf</i>	
	4 eggs laid	28 June, 1989 at ?
	Infertile	
1990	<i>Sire: Worf</i>	
	5 eggs laid	25 June, 1989 at ?
	Infertile	
1991	<i>Sire: Raul</i>	
	12 eggs laid	27 June, 1991 at 4:30 p.m.
	8 eggs hatch	16 September 10:00 p.m. - 21 September 11:00 a.m.
	<i>(Note: 2 eggs infertile, 2 eggs died, 1 hatchling died 27 Oct.)</i>	
1992	<i>Sire: Raul</i>	
	13 eggs laid	27 June, 1992 at 5:00 p.m.
	13 eggs hatch	23 September 8:00 a.m. - 29 September 10:00 p.m.

Egg laying time rounded to nearest half hour.

Duration of egg laying 45 minutes to 96 minutes.

Incubation Period in Days

	<i>Tasha Yar</i>	<i>Kaylar</i>
1989	87-90	—
1990	82-87	—
1991	82-87	81-86
1992	79-81	88-94

mean = 84.4

mean = 87.3