

FIJI BANDED IGUANAS

GEMS OF THE SOUTH SEAS

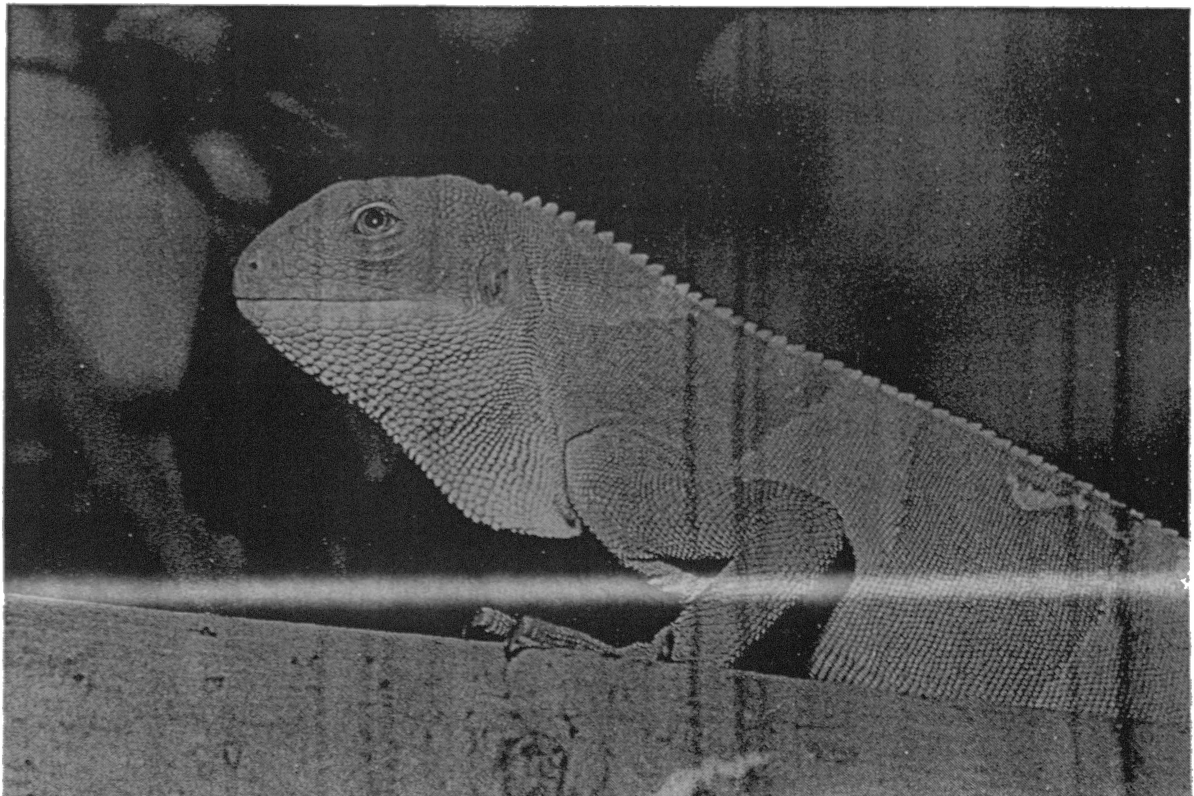
BY DAVID BLAIR

Few creatures on this earth can equal the brilliant coloration and delicate beauty of the South Pacific banded iguanas. These members of the genus *Brachylophus* are native only to islands in the Fiji and Tonga groups, thousands of miles over open ocean from their nearest relatives in the Americas. In fact, they are the most isolated members of the Iguanidae, their ancestors probably first reaching the South Pacific by rafting on floating vegetation transported along by the South Equatorial current.

Until recently, the genus was considered monotypic with only one species, *B. fasciatus*, recognized. Its common name, Fijian Banded Iguana, stems from the fact that in this species the male's emerald green coloration is broken by two or three broad (up to 2 cm. wide) vertical pale blue bands. Females almost always lack any banding pattern

and have a smaller head and smaller, paler throat fan than the male. Both sexes have a uniform yellowish-green ventral coloration and red-orange eyes. Adult males average 16.6 cm. in snout-vent length, with females slightly smaller at 15.7 cm. snout-vent length. However, since the female has a longer tail than the male, both sexes reach approximately 70 cm. in overall length. Females also lack the male's prominent femoral pores.

Even though this species is widespread throughout Fiji and Tonga and has been introduced on Vanvatu (formerly New Hebrides), it is rarely seen in the wild and its habits are poorly known. In fact, as of 1981, it was believed that this lizard had never been photographed in its natural habitat! *B. fasciatus* has, however, been kept and successfully bred at several institutions including Toronga Zoo in Australia, San Diego and Knoxville Zoos in



The Fijian Banded Iguana, *Brachylophus fasciatus*. Photograph: David W. Blair



the U.S., and at Orchid Island cultural Center, Suva, Fiji. These programs have provided us some information on its captive behavior. Apparently, males are extremely territorial and communicate to other iguanas by a series of brief bursts of rapid head bobs and highly individualized sequences of slow bobs. They are also capable of rapid color changes when aroused, involving a darkening of the green background color which increases the contrast with the vertical blue bands. They also display pronounced profile changes, enhancing their apparent size by extending the throat fan, vertically expanding the torso, and raising the dorsal crest.

Banded iguanas kept in semi-natural captive conditions in Fiji begin mating in November and this activity often involves multiple copulations. Six weeks following the last copulation eggs are laid in a burrow approximately one body length deep which the female digs in a carefully selected site in loose soil. At the Orchid Island Cultural Center in Fiji, clutch size ranges from three to six, with an average of four eggs. San Diego Zoo has seen clutches from one to ten eggs, with an average of five eggs. Their breeding season is also somewhat different in southern California, with most eggs laid between April and July, although occa-

sionally nesting has occurred as early as January or as late as December. San Diego Zoo females have laid eggs in their second year; however, fertility in these first clutches may be low. This species lays its eggs at the entrance of the nest burrow and then carefully pushes them with the forefeet to the rear of the chamber. Eggs are characteristically placed side by side in rows two-wide. Incubation time is incredibly long in comparison with other iguanids, taking from 18–30 weeks (average 25 weeks) to hatch. Hatchlings range from 19.8–21.3 cm. in overall length, 7.3–7.7 cm. snout-vent length, and weigh from 8–12 gm. They can usually be sexed soon after hatching by the distinctive vertical blue bands in the males.

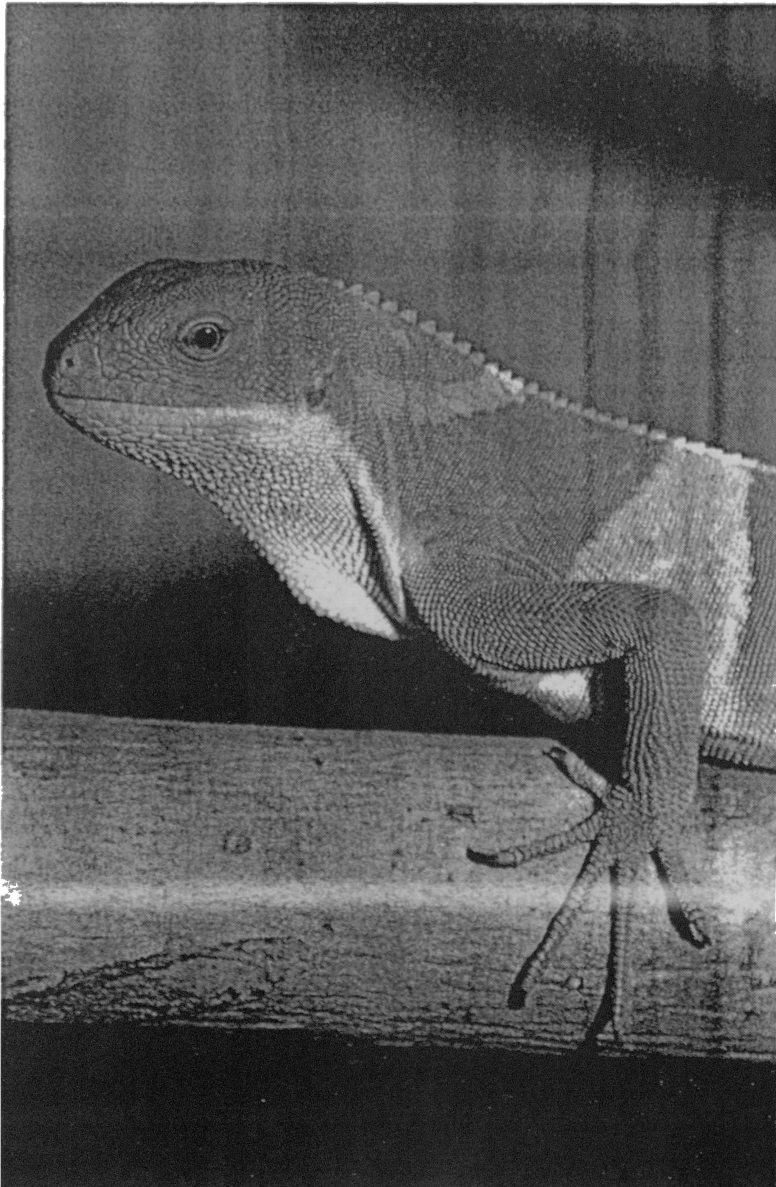
In January 1979, John R. H. Gibbons from the University of the South Pacific, Suva, Fiji, visited the tiny island of Yaduataba in the northwestern section of the archipelago. He was exploring remote islands in an effort to expand the known range of the banded iguana. Instead, he found an iguana which differed substantially from any known specimens. Close examination revealed it to be a new species never before described. It was given the name *Brachylophus vitiensis* or “crested iguana.” The 0.7 km (173 acres) island supports

several hundred iguanas in pockets of primary forest mainly on its western slope. Although uninhabited by humans, there has been extensive tree cutting and burning and there was a large number of feral goats present. Two years later, in January 1981, four more crested iguanas were discovered on Matacawalevu Island in the Yasawas, about 100 km. west of Yaduataba. In fact, one was even featured in the motion picture "Blue Lagoon."

B. vitiensis differs markedly from *B. fasciatus*. It is a larger animal, with both sexes reaching a snout-vent length of 18.5–22 cm. and a total length of up to 87 cm. There is also very little sexual dimorphism. Both males and females have a light green background color with two or three narrow vertical white bands less than 1 cm. (average .6 cm.)

in width. They also sport a much taller dorsal crest with conical spines reaching 1.2 cm. high. In fact, the only difference between the sexes appears to be the larger femoral pores and gular pouch of the male. The iris of the eye is pinkish-gold and the throat fan is large and square. When agitated, this species changes very rapidly to a gray or jet black coloration, although the return to their normal state takes substantially longer.

In contrast to *B. fasciatus* which consumes insects as well as vegetation, adult *B. vitiensis* appear to be totally herbivorous in the wild. In captivity, juveniles will, however, take some insects and are much more voracious feeders than their banded counterparts. The reproductive habits of crested iguanas also show substantial differences.



The Fijian Banded Iguana,
Brachylophus fasciatus.
Photograph: David W. Blair

They usually mate in March and April and lay three to four large (c. 3.6 cm. long) white eggs breadth-wise in a single line in a horizontal burrow and are then buried. As might be expected, hatchlings are also larger in this species (overall length 27.7–28.8 cm., snout-vent length 8.3–8.5 cm., weight 18.3–20 gm.) and incubation goes even longer than *B. fasciatus* — approximately 35 weeks!

B. vitiensis inhabits only the northern rain-shadow islands with precipitation less than 180 cm. per year. They seem unable to survive on the more mesic islands which comprise most of the remainder of the Fiji group. The majority of these islands receive substantially more than 200 cm. of rain per annum and are somewhat cooler, dropping to less than 16°C on some nights.

There are several islands, including Malolo Leve, which are inhabited by *Brachylophus* that appear to be intermediate between *fasciatus* and *vitiensis*. Further investigation may name additional species or subspecies in this genus.

Both species of *Brachylophus* are considered endangered, and their general decline has been observed for several decades. The exact reasons for this decline are not fully known, but are generally considered to be habitat loss including the felling of many native trees and the introduction of predatory feral animals, notably cats, dogs, and possibly the Indian mongoose. Competing animals such as pigs and goats have also had a devastating effect on native vegetation, especially on small islands. Despite attempts to educate native Fijians, iguanas are still feared by many and are often killed on sight when encountered in the bush. It is doubtful whether the \$50.00 fine for poaching or illegal export has provided much protection for animals in such desperate need of more stringent conservation measures.

South Pacific banded iguanas are still uncommon in U.S. collections. Virtually none of the estimated 50–100 specimens in American zoos as of 1981 were obtained with the knowledge or consent of the Fijian Government. Although some smuggling apparently still continues today, small numbers of legal animals have been imported by zoos in the last ten years from Fiji and, reportedly, also from Europe. Few of these are ever offered to the private sector, and the ones that have often com-

mand prices of up to \$5,000 each. Success of several captive breeding programs in the U.S. and Europe may someday allow this situation to change.

In captivity, these iguanas require spacious, well-planted enclosures providing secluded spots for females, and large areas for the territorial males. A minimum cage size for an adult pair should be 1.5 m. long × 1.5 m. wide × 1.5 m. high. Several sides of the cage should be screened to allow adequate air circulation. Numerous sturdy branches for climbing must be included and should be as thick as the lizard's body so they may bask comfortably under overhead lights and heat sources. The cage bottom substrate can be peat or sphagnum moss which is sprayed on a regular basis to keep it moist and provide relatively high humidity.

Only nontoxic plants should be used to landscape the cage. One of the best is hibiscus, along with *Ficus benjamina*, *Pothos*, *Philodendron*, and *Nephthtis*. The iguanas will browse on the leaves and flowers of these plants, so they may have to be rotated in and out of the enclosure on a regular basis. A shallow bowl of fresh water must be provided at all times, but should not be depended upon as their only source. They must also be misted at least every other day, and they prefer to lap the drops off of leaves and branches. A small hand-pump sprayer works well for this purpose and may also be used to wet the moss on the cage bottom.

Banded iguanas are known to tolerate low temperatures of at least 16°C (61°F) in the wild, but most institutions in the U.S. choose to keep them at least 22.2–26.7°C (72–80°F) at night, raising temperatures to 26.7–29.4°C (80–85°F) during the day. A hot spot of about 90°F (32.2°C) should also be provided. Natural sunlight is essential for the long-term survival and well being of these iguanas, and artificial lighting should never be relied upon solely for long-term maintenance.

Fijian banded iguanas are omnivorous in captivity and apparently also in the wild, consuming fruits, flowers (particularly the stamens), leaves, and various insects. The proper diet in captivity consists of a mixture of well chopped green leafy vegetables (chard, parsley, turnip greens, mustard greens, beet greens, collard greens, kale, dandelion leaves, etc.), grated squash and carrots, two or three chopped fruits (apples, pears, grapes, melons,

tomatoes, mangos, bananas, papaya, etc.), and a variety of insects including crickets, mealworms, butterworms, waxworms, hornworms, and silkworms. Other foods offered may be alfalfa, bean sprouts, broccoli, hibiscus (leaves and flowers), mulberry (leaves and fruits), strawberries, blueberries, dandelion flowers, and daisies. Food must be dusted with a vitamin supplement and calcium carbonate on a regular basis. Gravid females can also be given neonate mice and small amounts of softened monkey or primate chow or low fat premium dog food. Banded iguanas often prefer not to leave their perches to feed from a bowl on the bottom of the cage and small feeding stations up in the branches are often utilized more. Insects are best fed one at a time by hand in forceps held 2-4 cm. in front of the iguana's face. For giving additional vitamin or calcium supplements or for animals that are initially reluctant to feed, pureed fruit or baby food may be offered from an eyedropper or syringe (needle removed) held directly to the animal's mouth.

Clearly, care of the South Pacific banded iguana is more like that for the true chameleons than that for most other large iguanids. If special attention is not given these somewhat delicate lizards, they will not thrive, but with proper housing and care, they may live many years and reproduce well.



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In Memory of John R. H. Gibbons

His dedication to, and knowledge of, South Pacific banded iguanas may never be equaled. He will surely be missed.

ATTENTION IGUANA OWNERS...

Any demised *Cyclura*, and also *Ctenosaura* and *Iguana*, are needed to prepare skeletons for a systematic research project. Please consider donating your deceased animal to science! *Cyclura* skeletons are few and especially needed. All shipping expenses will be paid. Please contact Dr. Richard Montanucci c/o I.I.S. Thank You.

The Editors