

Serpents in the Clouds

Boelen's Python (*Morelia boeleni*) Research and Conservation Efforts

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This article is intended to provide a glimpse into the natural history and captive care of the Boelen's Python.

Soaring mountains extend from the east of Papua New Guinea to West Papua (Irian Jaya). This, the world's second largest island, is one of the only places on earth that is still in what some would consider the Stone Age and is still virtually undiscovered. Almost every day there is a new species of fauna discovered or observed in this amazingly undisturbed geographical area. Here, nestled deep in the mountains, hidden by the slow moving mist of the clouds, dwells a



creature that to this day - almost 50 years from its original discovery - lives virtually unchanged and untouched.

Ever since I became aware of the Boelen's Python, I have been captivated by its beauty and the mystery that surrounds it. This led me to team up with my good friend and partner to develop a research center that specializes in a diverse selection of exotic and difficult to maintain species. *Morelia boeleni* was at the top of our list. We began working with this fragile species in the winter of 1998 and since that

time, we have made a lot of progress. Last year we began writing the first book that provides comprehensive information about this animal. It will be published this year. Beyond that, we have begun developing a concept television series called the Reptile Chronicles using an animated reptile host to report on exploratory field experiences. My filmed visit to the uncharted mountains of Papua Indonesia may become the first in the series.

Background. A male Boelen's Python was first observed on December 25, 1952 by Dr. K. W. J. Boelen in Dimija. R. Den Haan in March 1955 collected second and third animals (both females) in Okito and a fourth animal in an area called Wissel Lakes. Dr. C. J Royer subsequently observed and collected another male on February 19, 1963 west of Lake Paniai.

In 1953 L.D. Brongersma described a new species of Serpentes, Boidae: *Rostral as wide as high, visible from above, with a deep groove on each lateral side. Internasals 1.2 times as long as wide. Anterior prefrontal only very slightly longer than broad (length 12.2 mm, width 12.0 mm), 1.3 times as long as the internasals. A head uniformly black above. Rostral black with the outer borders of the labials yellow. The yellow stripes do not reach past the under shield of the eye or nostril.*

In 1958 Eric Worrel described a specimen named *Liasis toronga* that was collected from the Lae Territory of New Guinea. The description indicates that it was a specimen of *Liasis boeleni*. One notation from Erik Worrel that differed from that of L.D Brongersma was that there were some possible differences in color of the chin and throat of the animals collected. This might be related to the sex of the animals captured since males possess more black marking under the dorsum of the chin and females show more yellow.

Description: The body of the Boelen's Python is adorned with jet black and yellow stripes covering the lateral side and dorsum. Some specimens have been noted to display different banding and striped labial color. There is speculation that the higher the elevation, the more banding and dissimilar distribution of diverse color markings. Review of the available literature indicates that this animal was described elsewhere in New Guinea, but under a different name.



Our work at CFRAR: This snake's habitat is largely unknown. Where they live is extremely dangerous and difficult to access, and the locals are often unwilling to take outsiders to these remote locations. I recently traveled to the highlands of Papua Indonesia looking for this animal. I wanted to find out why so little is known about a species of snake known in the wild to reach lengths of 14 feet with the girth of a grown man's leg. How has this relatively large animal escaped our detection and understanding? How have they been able to survive in this unique environment, and how many are actually out there?

For the past seven years we at the Center for Reptile and Amphibian Research (CFRAR) have been actively evolved with the captive and conservation of these snakes. We do not condone the purchase and captivity of these snakes by novice herpers and collectors because these animals have a very high mortality rate in captivity.

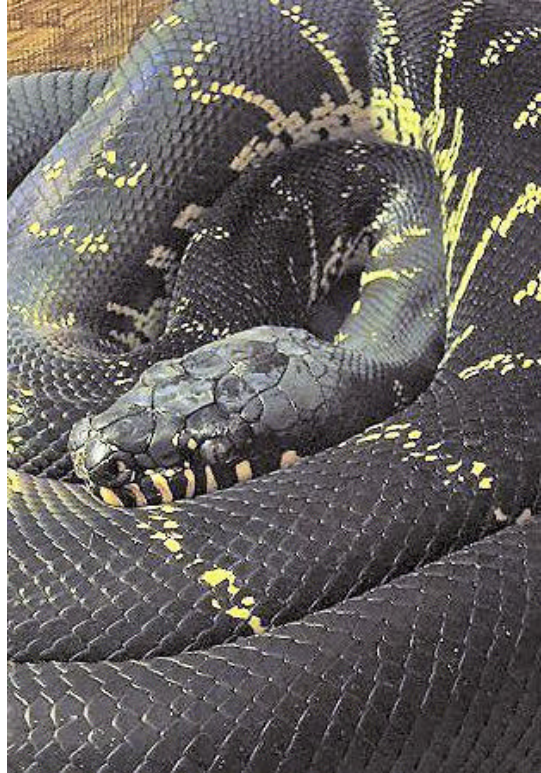
In early 2000 CFRAR began developing Project Black Python, a privately funded research project that's main goal is to help better understand these creatures and shed light on their unique behavior and captive propagation by sharing information with various institutions and private individuals.

Adult snakes caught in the wild are prohibited from exportation; only captive-hatched, or captive-bred animals from Indonesia may be exported, and the Indonesian government pays close attention to these animals and their high demand in the private and black market sectors of

reptile keeping. Back in the early 80's when these pythons first started becoming popular, they typically were brought in from the eastern section of Papua New Guinea.

These early animals were different in appearance than those seen today. Size and coloration of striping were noted to be unusual. They were much larger in girth and length. The captive-hatched and captive-bred animals from the farms in Indonesia typically are yellow-banded. These differences in appearance may be contingent upon the snakes' location on the island. Perhaps there is even a subspecies of the snake!

Our research has yielded some exciting observations and theories about breeding problems. In the wild these snakes rely on nest sites that they either create themselves or take over from some of the ground dwelling mammals, such as the bandicoot. These nests play an extremely crucial factor in their survival. The mountains where they live are 7,500-8,500 feet in elevation. While in the mountains of Central Papua Indonesia, I found the temperature to be around 44 degrees Fahrenheit in the mornings. For a relatively large python to tolerate such a low temperature on a regular basis is quite impressive.



The snakes typically stay in their nests until the morning sun breaks through the low lying clouds and then take advantage of heat from the sun. Their black coloration allows them to quickly and efficiently absorb heat. (There has been some speculation that the facial stripes and body striping allows them to release excess heat.) Basking usually occurs early in the morning and during several other brief periods later in the day. This activity might last for 30 minutes to an hour. It subsides after mid afternoon when the snakes return to their nest sites.

The areas where the nest sites are located are extremely dangerous and difficult to reach – steep, slippery rocks and dense vegetation are everywhere. The outside nest areas tend to be covered with skin shedding and scat. It seems possible to me that these snakes utilize shed skin and feces in order to be recognized by others of their kind.

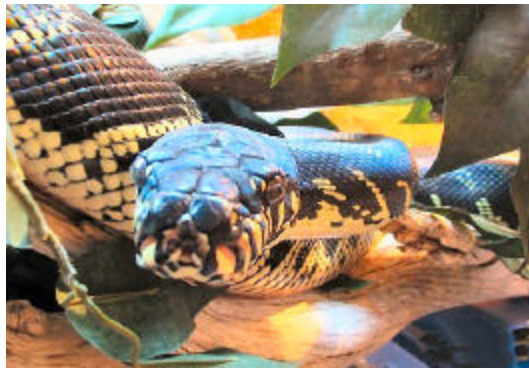
There have never been two animals seen in one area, and in captivity these snakes tend to be antisocial. When brought together, both sexes get quite agitated except during breeding when males will seek out females. The peak breeding season is from August to December.

There are many names for this snake in Indonesia. The natives in West Papua call them, *Wallow*, *Hitam Wallow*, or *Boelen*. In Java they are called *Sanca bulan*. When I was in West Papua, I spoke with the natives about the Boelen's Python. The natives are aware of their presence, respect them, and learn to work around them. But the snake's habitat is so dangerous to access it

seems that the natives would not be inclined to bother them regardless of their attitude toward them.

Boelen's Pythons in captivity. These snakes, when in captivity, appear to experience a high degree of stress. They are uncomfortable with excess amounts of room but also are anxious with too little room. Consequently, we design six foot by three foot by three foot enclosures that the animals seem to accept well.

In order to approximate their natural habitat, we incorporate low light with relatively high UV output. We turn on basking lights early each morning for up to two hours at 90° F. Afterwards,



the enclosures cool slightly (80-85°F). Another basking session is provided around midday. Shortly after the last basking session, we introduce a light mist of water to increase the humidity to 40-60%. (When using misting units it is important not to create excessive moisture.)

There has been much speculation about what these snakes feed on in the wild. Small birds, bats, and small mammals are likely candidates. When visiting their environment, I did not see any ground dwelling

birds, but I did notice many burrows in the area. Most of these burrows were made by bandicoots, small ground dwelling mammals. There also were cuscus, a larger marsupial. In captivity we usually feed our Boelen's pythons rodents of different sizes depending upon each snake's size and weight. We also have used small, thawed chicks to induce reluctant feeders.

Problems with captive breeding efforts. While ultimately breeding this snake is not as difficult as one would expect, the process of producing eggs in captivity is quite challenging. To my knowledge there have been only two successful captive breeding efforts. The difficulty breeding these snakes is related to the difficulty keeping them healthy. Imported animals usually are dehydrated and acclimate poorly. Newly imported animals usually die within a few months, and the ones that do survive characteristically have a relatively short life span.

If two animals that are sexually mature (typically 2-3 years for females and a shorter period of time for males) begin copulating, the females will subsequently display signs of becoming gravid. They will increase their basking behavior and over time refuse to feed. They also will increase their length and girth and display a classic pre-lay shedding behavior. But sadly, they usually fail to deposit any eggs. There has been much debate, but little agreement about why these animals don't produce in captivity.

I have come to know several people in Indonesia who breed Boelen's pythons regularly. (They usually sell the offspring to the highest bidder.) Why do the snakes reproduce in Indonesia but not in other environments? Perhaps elevation and climate are factors. Further research is needed with captive-produced and captive-hatched offspring.

Journal entries in West Papua. It feels like I have been here for months. The amount of work is so strenuous for both the body and the mind. I finally understand why most people do not come here - it is just too difficult. The journey is so amazing. I am mesmerized by the culture and the environment. It is so sad to see how poor the people are. They work for nothing but somehow survive. We really take for granted what we have. Every time I look out into the distance I see the mountains above. The clouds roll over the jagged faces of this untouched environment. It is calling me. No matter how tired I am, I cannot stop. This is why I am here.

June 3. I think one of the most uncomfortable things to adjust to in this small town is the bathroom (squatter). There is a toilet, but it doesn't flush. You have to pour water down it. It took me awhile to get used to it.

June 4. We arrived in Irian Jaya or as it is known today, West Papua, Indonesia. As soon as we got off our little plane we were swarmed by locals - people wanting handouts, selling trinkets, and trying to help us carry our bags for some money. I let a man carry my gear and he said, "Nama saya Mickey Mouse," which means my name is Mickey Mouse. I laughed and told him my name was Donald Duck and that I was grateful for his help. Everyone here tries to be very western. But the culture here is so rich. Why would they want to change it?

June 5. The mountains are amazing! Truly breathtaking. It is so strenuous to get to where these creatures live. We arrived at our base village. Then we geared up and set off into the mountains after eating a wild pig that was slow-roasted in a pit in the ground. Bad idea. This hike was like nothing I have ever done in my life. At least a 70% grade, slippery rocks and vegetation all around creating a very narrow path to walk on, then top it off with 40-50 pounds on my back. I stepped off the path and fell through the ferns. Almost lost it! The temperature ranges from 90° in the lowland areas to 75-85° in the high-country.

June 6. We arrived yesterday afternoon. Passed out. I awoke to the shivering cold. I was not expecting this. I came out of my tent at the edge of the village and looked up in awe. The mountains were so dense with vegetation, and the clouds were slowly going over them. It was breathtaking. We checked the temperature - 44 degrees F.



June 7-8. We have been scouting the mountains. It's absolutely exhausting. There is not much reptilian life here at all. I found a huge spider web that spanned 12 feet by 12. It was fishing line thick.

June 9. One of the villagers brought us a bag "Wallow, wallow," he said. I looked in and sure enough, well you know. At that point my view on the whole species and trip changed. There is

something spiritual about these mountain sites. It's not just the snakes; it's the people and their culture. I hope to be able to share this adventure with everyone.

A final note: I often think about what lies ahead for the Boelen's Python. Will their successful propagation continue to be limited to farms in their native land, or will some individual finally overcome the challenge of producing viable eggs and ensure the survival of the species? The future is so difficult to imagine especially with the way the world is today and the direction civilization is headed. Many animals and plants face extinction. As quickly as these snakes were discovered, they could vanish back into the clouds they were born from.