

Jamaica's Endangered Species

Russell A. Mittermeier

Man and mongoose between them have decimated several endemic reptile and mammal species in Jamaica. This paper, the result of a survey early last year, describes the present status of the one land mammal, the hutia, and all the reptiles currently recognised as endangered, and suggests a few more to add to the endangered list.

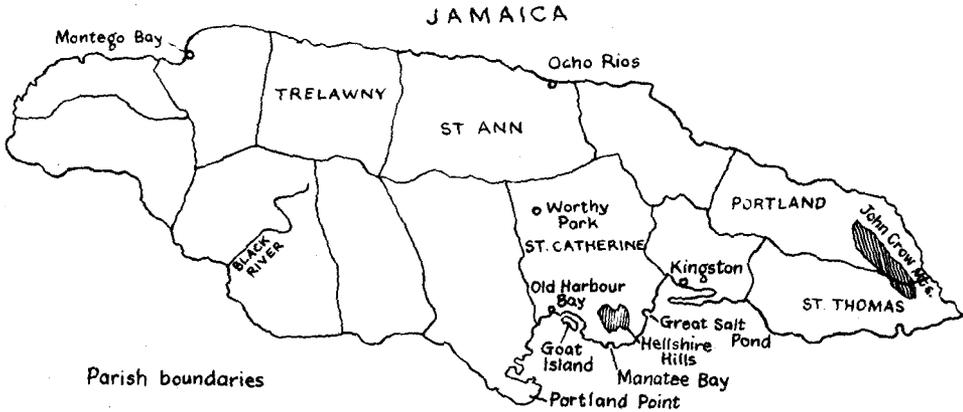
Jamaican hutia *Geocapromys brownii brownii*, Indian coney, coney*. A rodent roughly the size of a cottontail rabbit, with a white sheet in the IUCN *Red Data Book*, the Jamaican hutia was once quite abundant, and a staple in the diet of the Arawak Indians, Jamaica's aboriginal inhabitants. Judging from hutia remains in Arawak middens, the hutia's range at one time included much of the southern part of the island and at least the Parish of St. Ann in the north. But continued hunting pressure by man, mongoose *Herpestes griseus* (introduced in 1872) and probably also feral dogs, has confined it to the south-east of the island, particularly the John Crow Mountains and Hellshire Hills, although recent evidence suggests that it may be making a comeback. Since the turn of the century, it appears to have struck an equilibrium with the mongoose, as have a number of other Jamaican animals. Furthermore, although it is still occasionally eaten by natives in the John Crow Mountains, and probably sometimes falls prey to hog hunters in the Hellshire Hills, domestic animals have replaced it as a source of food. In the Hellshire Hills, especially around Great Salt Pond and Manatee Bay, Parish of St. Catherine, near the town of Worthy Park, they have started to come down from the hillsides into plantations in the valleys. Either they are driven down by a population explosion or they are actually beginning to adapt to human conditions.

Even though the hutia may be coming back in certain areas, Dr. C Bernard Lewis, Director of the Institute of Jamaica, believes that the species is not yet sufficiently secure to warrant its removal from the endangered list. It is totally protected under the Wildlife Conservation Act, but the legislation is not enforced.

Since 1961, the Hope Gardens Zoo in Kingston has acquired 18 hutias, of which six (two males and four females) are still alive. In addition, four were born in captivity: one in July, 1961, one in October, 1965, and two in September, 1967. The six specimens now in the Hope Gardens Zoo all came from the John Crow Mountains in the Parish of Portland (A.C. Allen, personal communication and Records of Hope Gardens Zoo).

Little information is available on hutia behaviour. The animals seem to live and travel in pairs, since hunters almost always catch two (male and female) together, and also dig burrows in which they spend a good part of the day. For some reason, they are often associated with limestone areas.

*The names following the Latin name are those commonly used in Jamaica. The name preceding the Latin name is the more widely used English name.



Jamaican iguana *Cyclura collei*, Guana.

A fairly large species (total length 113cm: Grant, 1940), closely related to the rhinoceros iguana *C. cornuta cornuta* and the Cuban ground iguana *C. macleayi macleayi*, the Jamaican iguana is now either extinct or very nearly so, due to heavy hunting of the adults by man, and loss of eggs and young (and perhaps even adults) to the mongoose. In 1910, the noted herpetologist, Thomas Barbour, reported it as very rare and restricted to Goat Island where, he said, the mongoose did not occur, and the Hellshire Hills. (Goat Island, which consists of two islands, Great Goat and Little Goat, connected by a mangrove swamp, in all probability was once a continuation of the Hellshire Hills. In a 1940 work on the herpetology of Jamaica, Major Chapman Grant wrote that he had seen only two specimens of the iguana on Goat Island, but that the mongoose was abundant, having been introduced by the local fishermen to get rid of iguanas and snakes. Dr. C. Bernard Lewis conducted a survey of Goat Island in the mid-1940's and found a handful of adult iguanas, but no signs of young or partly grown animals. Since that time, not a single live iguana has been seen, although sporadic reports of its existence have come from the hog hunters in the Hellshire Hills. These reports, however, are of questionable value since the hog hunters know that if they say iguanas are still to be found in the area, they will be paid to take scientists in to look for them.

Jamaican hutias



In the past few years, several surveys of the Hellshire Hills and Goat Island have been made. Dr. Lewis could not find any signs of iguanas (such as tail drags) either on Goat Island or in the Hellshire Hills, even though favourite iguana foods, such as the plum-like fruit of *Picorhododendron* and the pink flower of *Ipomaea pescapra*, were in abundance. Mr. A. C. Allen, Director of the Hope Gardens Zoo, and an associate spent three days in the Hellshire Hills and were equally unsuccessful. In a survey of Goat Island in March, 1971, I was unable to find a trace of the iguana. Several village people in Old Harbour Bay (the village nearest to Goat Island) swore that there were still iguanas there, but admitted after further questioning that they had not visited the island for at least a decade, most of them not since the end of the Second World War, when a number worked on the American installation on the island. Goat Island itself is very hot and dry and largely covered by dense thorn thicket. The only vertebrate animals I saw any signs of were birds and two small lizards *Anolis lineatopus*.

The only solid evidence for the continued existence of the Jamaican iguana was obtained in the summer of 1970. A group from the University of the West Indies in Kingston, engaged in a two-week survey in the Hellshire Hills, succeeded in getting a dead iguana from a local hunter. The animal was mummified and had been dead for at least a year, but subsequent analysis determined it to be a Jamaican iguana.

The information at hand suggests that there is indeed little hope for the Jamaican iguana. Though protected by the Wildlife Conservation Act it is apparently still shot on sight on the extremely infrequent occasions that it is seen. The only possible way to save it would be to establish a well-protected reserve in the Hellshire Hills, and it may be too late.

Jamaican boa *Epicrates subflavus*, Yellow snake, Nanka.

A medium-sized snake (nose to tail 218 cm for a large specimen, Grant, 1940), the Jamaican boa is nocturnal and primarily arboreal. It has suffered from the presence of the mongoose but perhaps less so than other Jamaican reptiles. It is, however, killed on sight by man, and also subject to predation by feral cats. Barbour (1910) reported that it occurred on Goat Island and in the Hellshire Hills. It is also known from the parishes of St. Thomas and Trelawny. At present, there are four specimens in captivity in the Hope Gardens Zoo and an unknown number of others in private collections throughout the world; it has bred in captivity on a few occasions.

Dr. Lewis is not certain that the Jamaican boa should be regarded as a threatened species. However, since it is killed on sight, very limited in range and apparently nowhere abundant, it would probably be wise to give it full protection as soon as possible.

American crocodile *Crocodylus acutus*, Alligator

The only endangered Jamaican reptile that is not endemic, the crocodile has a pink sheet (indicating critically endangered) in the IUCN *Red Data Book*, which describes it as surviving in moderate numbers at Great Salt Pond, a private estate where shooting is prohibited. At Portland Point alligators are heavily hunted for sport by well-to-do

American sportsmen. Since the beginning of 1971, the animal has been totally protected in Jamaica, but is still usually killed on sight. Until recently, there were reports of fourteen- to fifteen-foot individuals in the Great Salt Pond. These now appear to have been wiped out, but some still occur in the Black River and a few other isolated areas. Dr. Lewis does not believe it is presently threatened in Jamaica, but it could very well be in the near future and must be carefully watched. A commercial enterprise called Jungle Safari reportedly has about 2000 crocodiles, which are used for both show and breeding enterprises, on the north side of Jamaica, on the main road between Ocho Rios and Montego Bay.

Skink *Diploglossus occiduus**, Galliwasp, Gully asp, Yellow wasp.

This skink, the largest anigid known to occur in Jamaica, — a specimen with a head-body length of 320 mm (Grant, 1940) having been recorded — is probably now extinct. Grant (1940) hesitated to declare it so, but Cousens (1956) stated that 'its right to consideration as a still surviving form is very improbable. It has not been collected in over 100 years'. Dr. Lewis believes that it was still around in 1872 but that it was easy prey for the newly introduced mongoose. According to early writers, *occiduus* 'lived in holes in swamps and ate fish and fruit' (Grant, 1940). Grant, however, believes that it 'lived among rocks and fed on insects, adding lizards to its diet when larger'.

It is not impossible that this skink still occurs in isolated parts of the Hellshire Hills. Judging from the small numbers in collections, it was always rather rare and/or elusive, even before the introduction of the mongoose.

Skink *Mabuya spilonotus*, Snake-waiting boy.

A small skink (head-body length 70mm; tail 97 mm: Grant), once found throughout the lowlands, it is now restricted in range and rare. According to Grant, 'this genus and *Alsophis* . . . have suffered from the mongoose more than any other reptiles'. Slow-moving and apparently diurnal it is ideal prey for the mongoose and also feral cats, rats and mice. Grant (1940) found it abundant at Portland Point in the porous, hard limestone in which it could find refuge, but he added that the mongoose was beginning to invade the area. More recently, A.C. Allen was unable to find any in the Hellshire Hills, and Dr. Lewis said that he had not seen a specimen in about 15 years. It is possibly headed towards extinction in Jamaica.

Alsophis ater, Snake

Of medium size (total length 1100 mm: Grant) this snake is now either very rare or extinct. Diurnal and arboreal, it is rather conspicuous, especially because of its habit of feeding on tree frogs that make a great

*Grant (1940) referred to this animal as *Celestus occiduus occiduus*, believing it to be a subspecies of the smaller and still abundant *C. o. hewardii*. Cousens (1956) preferred to consider *C. occiduus* a distinct species. Underwood (1959) showed that *Celestus* and *Diploglossus* are congeneric and since *Diploglossus* antedates *Celestus*, it has now replaced *Celestus* as the generic name of the Jamaican galliwasps.

deal of noise when captured. The mongoose was probably a prime factor in its decimation, but man undoubtedly played a role; like most snakes, it was killed on sight. Grant admitted that it was very rare but was reluctant to declare it extinct, even though 'he did not meet anyone who had seen a live specimen in years'. Dr. Lewis believes it is very likely extinct.

Suggestions

All the above mentioned endangered members of the Jamaican fauna are found in or near the Hellshire Hills, which, for some of them, are a last stronghold. Furthermore, these hills are one of the few relatively unspoiled tracts of land left in Jamaica. Properly managed and protected, the area would be an ideal wildlife reserve or National Park, but plans are now in effect for building a road into the hills and erecting a twin city for Kingston on their eastern edge. However, there is an escarpment of little economic value that runs from north-west to south-east through the Hellshires that would serve admirably as a biological reserve; moreover, because of its proximity to Kingston, it could be used as a field laboratory for university students and visiting scientists.

Acknowledgments

I would like to express my very sincere gratitude to Dr. C. Bernard Lewis, Director of the Institute of Jamaica, and Dr. T.H. Farr, also of the Institute. Thanks also go to Mr. A.C. Allen, Director of the Hope Gardens Zoo, and to Mr. Atkins, Assistant to the Director. Most of the above information was communicated to me by these people. Without their help and suggestions the compiling of this report would not have been possible.

The author is a Senior Fellow at Dartmouth College, Hanover, N.H. 03755 USA.

References

- BARBOUR, Thomas. Notes on the Herpetology of Jamaica. *Bull. Mus. Comp. Zool. Harvard*, Vol. LII, No. 15, 1910.
- COUSENS, Penny Norseen. Notes on the Jamaican and Cayman Island Lizards of the Genus *Celestus*. *Breviora Mus. Comp. Zool. Harvard*, No. 56, 1956.
- GRANT, Chapman and LYNN, W. Gardner. *The Herpetology of Jamaica*. Publ. by the Institute of Jamaica, 1940.
- HONEGGER, René E., *Red Data Book*, Vol. 3: Amphibia and Reptilia. IUCN, 1968.
- UNDERWOOD, Garth, A New Jamaican Galliwasp (Sauria, Anguidae), *Breviora Mus. Comp. Zool. Harvard*, No. 102, 1959.

WWF Yearbook

The World Wildlife Fund's Yearbook 1970-71, edited by Peter Jackson, shows that 104 individual projects in 38 different countries in five continents were supported at a cost of over £355,000, with more than a third of the total money going to projects in Europe. The money has gone on aircraft and vehicles, fences, film, buildings, and a great deal of it on the absolutely essential preliminary scientific surveys, as well as outright land purchase for reserves such as the Shimba Hills in Kenya and the Marchauen in Austria. (Obtainable from WWF, Plumtree Court, London E.C.4. £1.60).