

Eland in Brazil

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The dry savannas of southern Brazil are difficult to exploit, being easily overgrazed. This article describes an experiment started in 1969 by a well-known Brazilian conservationist to establish the African eland as a meat-producing animal on this type of land.

In Brazil, the first eland calf was born in October, 1971 in the experimental herd of Dr. Paulo Nogueira Neto at his estate near Campinas, São Paulo.

Dr Nogueira, lawyer, university zoology professor, part owner of sugar plantations and a sugar mill, and an IUCN Board member, has long been involved in zoological and botanical research and experimentation. Several years ago, he began a search for a meat-producing animal that would thrive on the extensive dry savannas of southern Brazil. The search narrowed to the nilgai and eland, and Dr Nogueira elected to begin with eland.

Obtaining breeding stock was difficult, because of Brazil's severe quarantine restrictions and import regulations. Since Brazil operates no quarantine station, it will not admit any ruminant born in Africa or Asia. Even those born in the United States must pass a series of medical tests immediately before shipment. USA-born eland are not easy to acquire, since they are in demand by zoos and game ranches.

I first met Dr Nogueira in the United States, when he was seeking information for his project. In 1968, I visited him in Brazil and travelled with him through some of the savannas. At his Campinas estate, we reviewed his plans for an experimental compound. Since then, my assistant, Dana Horsemen, and I have acted for him in acquiring and shipping elands. Even shipping arrangements are complicated, as there is only one flight a week for such animals, and delivery to this flight often means improvised combinations of truck and plane.

The first eland arrived at the São Paulo Zoo in January, 1969. By February, 1970 three males and two females had been delivered. They were held at the Zoo for conditioning, observation, and the required immunisations before being moved to Campinas. Further acquisitions await the granting of Brazilian import licences.

Because acquiring stock is difficult and costly, Dr Nogueira decided to maintain the herd under optimum conditions until a number of calves had been born. Campinas is close to the savannas but in a more fertile zone, and prize-winning cattle were raised here until a few years ago. When I visited the site again, late in 1970, the animals were housed in a 48-acre compound, together with a herd of Red Sindhi cows. Nogueira's hypothesis, which several days of observation confirmed, was that the presence of the cows would make the eland more tractable. Indeed, the interaction between the species is complex and fascinating.

The compound includes a fenced corral fitted out with loafing shed,



ELAND ON THE FARM *P. Nogueira Neto*

bull pen, squeeze chute, and chute with scale. Feed supplement is provided in a long trough under the shed. When the gate is opened early each morning, elands and cattle are waiting to enter the corral, where they spend an hour or two. The practice facilitates observation, medication, and collecting growth data.

The vegetation of the compound includes a variety of native plants and exotics. Before the animals were introduced, there was a thick growth of shrubs and young trees with bole diameters of six inches or less. Aided by Nogueira's careful plant list, I tried to ascertain the elands' food preferences, but soon gave up; they were grazing and browsing quite indiscriminately, and the Red Sindhis were browsing, too! Though they had been in the compound for only a few months, the signs of change were clear. The more mature trees were intact above the browse line. The understory was receding. Grasses were increasing.

Much of the clearing was caused by the elands' habit of breaking branches and small trees by twisting them with their horns. Many of the broken trees were down but not dead, and a rich sucker growth was appearing along their trunks. Certain of the American Indians are said to have increased deer browse by breaking or cutting partly through saplings and weighing down their tips, and a few USA state game departments have adopted the practice.

One of Nogueira's chief concerns was whether any environmental factors would affect the elands adversely. Periodic fecal checks have revealed no difficulties with internal parasites. The animals moved to the compound proved susceptible to the botfly *Dermatobia hominis*. This lays its eggs on other flies, which in turn deposit the larvae on animals; the larvae burrow through the hide, live there for several weeks, then emerge and drop to the ground, where they complete their life cycle. While the elands (all adults then) showed many small scars, there were no evident adverse effects. Dr Nogueira now administers a systemic insecticide, which has controlled the infestation. None of the Red Sindhis showed extensive botfly scars, although at times they are also much parasitised, but a captive pair of marsh deer *Blastocercus dichotomus* had suffered more than the elands, requiring topical

medication. Dr Nogueira says the botfly is a problem in cattle only in shaded areas, not on open pastures or savannas.

The arrival of the first calf last October was a favourable sign. Its development, and the development of the next several calves, will be closely watched. Once a herd seems securely established, by births and additional importations, part of it will be moved to a larger fenced area in true savanna country. The results there should indicate whether eland will, indeed, become an adaptable and efficient meat producer. Brazil already has tens of thousands of water buffalo producing milk and meat. They are better adapted than cattle to Brazil's humid regions, and Dr Nogueira himself has a large milking herd. The relatively arid savanna regions have resisted efforts to exploit them. On my tour with Nogueira, I saw several places where farmers had attempted to establish grasses. This is hard work, beginning with laborious clearing of the scrub trees and brush. In most cases, grasses rapidly vanish under moderate grazing pressure.

Nogueira believes that eland which do not appear to compete with native animals, will do well in Brazil, and it seems more logical to introduce a consumer species adapted to the natural vegetation than to do violence to the area in vain efforts to support cattle. He is fully aware that some critical questions will be answered only by careful experimentation. For example, local soils are leached, and trace element supplements may prove necessary. Eland on the open range may be trained to visit corrals daily. If not, a new round-up technique must be devised.

While the experiment and interim results have been reported to Brazilian government departments and FAO, officials have thus far expressed only polite interest. Dr Nogueira believes he must carry the project, with his personal resources, far enough to prove large-scale feasibility.

Postscript: The eland calf has unfortunately died, but the other cow is thought to be pregnant.

Devil's Pupfish Saved

A tiny 20-mm-long fish surviving in only one hot spring in Death Valley in California, was saved from certain extinction last year. The water level in the spring where the entire 200-strong population of the devil's pupfish *Cyprinodon diabolis* occur was dropping at the rate of six inches a month because water was being pumped for irrigation nearby. This was discovered by Dr Robert R. Miller, editor of the *Red Data Book* on freshwater fish. The US Department of the Interior took action, and when legal action was threatened the corporation agreed to shut down the wells that were causing the fall in the spring's water level.

Breeding a Rare Monkey

The efforts of the American Association of Zoological Parks and Aquariums to organise captive breeding of the highly endangered lion-tailed macaque or wanderoo monkey *Macaca silenus*, described in *Oryx*, May 1971, have scored some success. Six animals were transferred from one zoo to another in order to improve the chances of breeding, breeding colonies increased from nine to ten, and sixteen young were born.