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THE ADDO ELEPHANT RESEARCH PROJECT: A BRIEF INTRODUCTION
by Anthony Hall-Martin

The "Addo Bush" is the local name of an extensive thicket of evergreen, succulent shrubs and small trees which lies between the Sundays River, the Zuurberg escarpment, and the Indian Ocean in the eastern Cape Province of South Africa. The dense, thorny, impenetrable nature of the thicket, the lack of permanent streams, intensely hot summers, prolonged droughts and irregular rainfall (about 15 inches per year) made this area most unattractive to both black and white settlers who arrived late in the 18th century. Because of these natural impediments to the incursions of man, the elephants that lived there were afforded a degree of protection from the ivory hunters who had virtually wiped out the elephants of southern Africa by about 1890.

The advent of roads, railroads, irrigation dams and canals, and the internal-combustion engine resulted in settlements and a gradual but certain encroachment on the Addo Bush. Large areas of the natural vegetation were cleared for crops and the stage was set for the inevitable final conflict with the Addo elephants, which were being steadily decimated and pushed into the least attractive, waterless part of their range. Because of their depredations to crops, their competition with domestic stock for water, and the threat to settlement and investment that they posed, a campaign to eradicate the remaining elephants was launched in 1919. About 120 elephants were shot, but fortunately the war against them attracted publicity, and later public sympathy for the elephants, and, ultimately, agitation for their protection. This resulted in the proclamation of the Addo Elephant National Park in 1931, when only 11 elephants were left.

Another two decades were to pass before the Addo elephants could be regarded as safe. While they were free to wander across the boundaries of the park, their running battle with farmers continued, and it was only after Graham Armstrong, the enterprising park warden, perfected his elephant-proof fence of tram lines and elevator cable that the Addo elephants could be confined to their sanctuary. The area that Armstrong fenced in 1954 was only 2,270 hectare (5,609 acres) of the park's total area of 7,735 hectare (19,113 acres). It was, however, enough to assure the survival of the Addo elephants and their rapid increase in numbers from 18 in 1954 to 93 in 1978. This has resulted in the inevitable, but not yet drastic, habitat change associated with elephants at high densities in most African parks where they occur. To assess the significance of such changes, and to counter any possible unwanted consequences, an intensive research programme on the ecology, population dynamics, and behaviour of these elephants was launched in May 1976.

The first phase of the study has dealt with getting the historical record straight - identifying animals still alive today from photographs taken decades ago, establishing a population register, setting out plots to monitor vegetation changes caused by elephants, and preparing detailed studies of their feeding habits, growth, and social behaviour. Completion and writing up of this phase of the project is scheduled for 1979, and is to be followed by a long-term project to monitor the response of the elephants to management strategies undertaken now and in the future.

The study has been largely financed by the Research Section of the National Parks Board of South Africa as one of its many ongoing projects aimed at a better understanding of the ecosystems entrusted to its care and providing

information upon which management policies may be based. A supporting role in the project has, however, also been played by researchers from South African universities. Professor Theuns Erasmus of the University of Port Elizabeth has co-operated in analysing food and faeces of the elephants in a study of their nutrition; Heinz Reuther of the University of Cape Town has co-operated in photogrammetric studies using stereo cameras for measuring the height and other parameters of growth of live elephants; Professor Anthony Starfield and Dr. Peter Furniss of the University of the Witwatersrand have co-operated in producing a working computer model which simulates the growth of the Addo elephant population. Other bodies, such as The Botanical Research Institute, have helped with the identification of plants, and the Endangered Wildlife Trust, a non-profit making body run by Clive Walker, has contributed funds to the nutrition studies.

Some of the most interesting information, and that which will probably be of most use to our colleagues like Iain Douglas-Hamilton, who is working on the WWF/IUCN Elephant Survey and Conservation Programme, is emerging from the "known" status of the Addo elephants. Like the elephants of Manyara in Tanzania and Amboseli in Kenya, every individual is known, as is the composition of all the family groups. All births and deaths over the past 25 years have been recorded, and we are accumulating data on the age of sexual maturity in females, the age at which bulls leave the family groups, and so on. The first precisely known calving interval has recently been recorded, though many can be fairly accurately estimated. We also have four observed matings on record and we are now awaiting the results!

Though our studies are still far from complete, we have already been able to use some results of the botanical studies for contingency management and development planning for the immediate future. The final results of the research project will be embodied in a management plan for the park, which will aim at maintaining a viable elephant population in a viable habitat. This latter consideration is particularly important because the Addo Elephant National Park supports the last remnants of the Addo Bush and is also the refuge of other rare mammals of the Cape, such as the Cape buffalo and the black rhinoceros.



Behind the Armstrong elephant-proof fence.
Photograph sent by Anthony Hall-Martin