Quagga experimental breeding project

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The quagga is an animal allied to the zebra. It was formerly encountered in vast herds on the great plains of South Africa between Cape Province and the Vaal River. It became extinct when the last individual died at the Amsterdam Zoo on 12 August 1883. The head, neck and upper parts of the body were reddish-brown in colour; they were irregularly banded and marked with dark-brown stripes which were more pronounced on the head and neck but which gradually became fainter until they disappeared entirely behind the shoulder.

The quagga, Equus quagga quagga, was the southernmost subspecies of the plains zebra. We believe that there were no natural barriers between the quagga and its northern relatives, the two subspecies Equus quagga burchelli and Equus quagga antiquorum.

Can the quagga be re-created?

For many years various scientists speculated on the feasibility of breeding back the extinct quagga from those southern plains' zebras that show tendencies towards the quagga in their lack of stripes on the legs and in their brownish colour. However, zoologists were divided about the taxonomic status of the quagga. Some leading scientists were against such a project on the grounds that the quagga, in their opinion, was a separate species of zebra, and thus could not be "re-created". Any quagga-like animal produced would merely be a "man-made look-alike" bearing no true genetic relationship to the extinct animal.

However, it has recently been shown by three groups of scientists, all associated with the University of California, working independently and applying different molecular biochemical methods, that the quagga was so closely related to the plains zebra, that it must be regarded as no more than a subspecies of the plains zebra. This research utilized dry muscle tissue and blood which were removed from the skins and carefully collected by R. Rau during the re-mounting of four of the 23 preserved specimens of the extinct quagga – namely three at
The extinct quagga, London Zoo, circa 1870.

The Natural History Museum, Mainz, Federal Republic of Germany, and one at the South African Museum, Cape Town, South Africa. Since these studies have shown that the quagga is the same species as the plains zebra, it is possible that the genes characterizing the colouration of the quagga are not irretrievably lost but are dispersed and diluted amongst the extant populations of the plains zebra.

A breeding programme to retrieve quagga colouration genes

There is therefore scientific justification for a selected breeding programme that will attempt to retrieve the genes characterizing these colouration patterns from plains zebra. This has been started with the capture of selected individuals at the Etosha Game Reserve in northern South West Africa/Namibia during March 1987. Nine animals were transported successfully from Etosha to the Nature Conservation Station Vrolijkheid near Robertson, approximately 200 km northeast of Cape Town, where an initial enclosure of 80×80 m had been built for the project.

As more enclosures were completed, the group of Etosha zebras was divided into breeding groups during December 1987. A total of six enclosures, two measuring 80×40 m each and four measuring 60×40 m each are presently available; more will be built as the numbers of animals increase.

In November 1988, more zebras were added to the breeding stock with the arrival of four selected animals from Zululand, Natal. The first foal was born in December 1988. Additional zebras, already selected, will be captured and transported to the breeding venue during 1989.
A project under close scientific supervision

The project is guided by a panel of scientists qualified in museum-based taxonomy, genetics, animal husbandry, veterinary science, and nature conservation. A stud book is being maintained in which details of each animal (matings, births, etc.) are entered. As the relatively small enclosures do not provide natural grazing, the animals are being fed according to a feeding schedule that has been worked out by an animal nutritionist.

To accelerate the generation successions, artificial insemination and embryo transplantation into surrogate mares (donkeys, horses, zebras) is envisaged. At present we have four breeding groups combining an Etosha stallion, an Etosha mare, a Zululand stallion and a Zululand mare.

These animals are all of the subspecies *Equus quagga antiquorum*, according to presently accepted views. A comparison of the Zululand plains zebra population (formerly known as the subspecies *wahlergi*) with that from Etosha reveals that Zululand zebras have the most advanced stripe-reduction, while maintaining a relatively light basic colour with fairly wide interspecies. Etosha zebras tend to have a darker basic colour, while stripe-reduction does not reach the degree of some of the Zululand animals and is less frequent.

As stated above, it is the opinion of the Quagga Experimental Breeding Committee that the quagga, or the genes responsible for the colouration characteristics of this "extinct" southernmost subspecies (or local variation of the widely distributed plains zebra), are not truly extinct. It was man’s greed and shortsightedness that caused the disappearance of this zebra from the Karoo and southern Orange Free State, over 100 years ago. We view this project as a unique opportunity to rectify this tragic mistake. In this sense we see the project as comparable to the conservation of endangered species and/or the re-introduction of rare species into areas where they have become extinct.