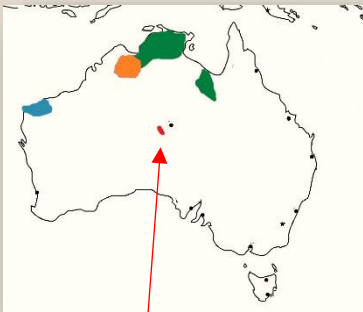


Livistona *mariae* Central Australian Cabbage Palm



Central Australian Cabbage Palms, *Livistona mariae* subsp. *mariae*, of Palm Valley, 150 km southwest of Alice Springs, have long been an enigma. How did this isolated stand of palm trees come to exist in a rocky gorge of the Larapinta (Finke) River in the MacDonnell Ranges of arid central Australia?

It is the *only* palm of Central Australia. Its closest relative, *Livistona mariae* subsp. *rigida* can be found about 1000 km north. *Livistona alfredii*, grows in a similar habitat along the Fortescue River in the Hamersley Ranges of Western Australia. In addition to the Central Australian Cabbage Palms that grow within Finke Gorge National Park, there are three other occurrences on neighbouring lands.



Red: *Livistona mariae* subsp. *mariae*
Green: *L. mariae* subsp. *rigida*
Blue: *L. alfredii*
Orange: *L. nasmophila*
(syn: *L. mariae* subsp. *occidentalis*)

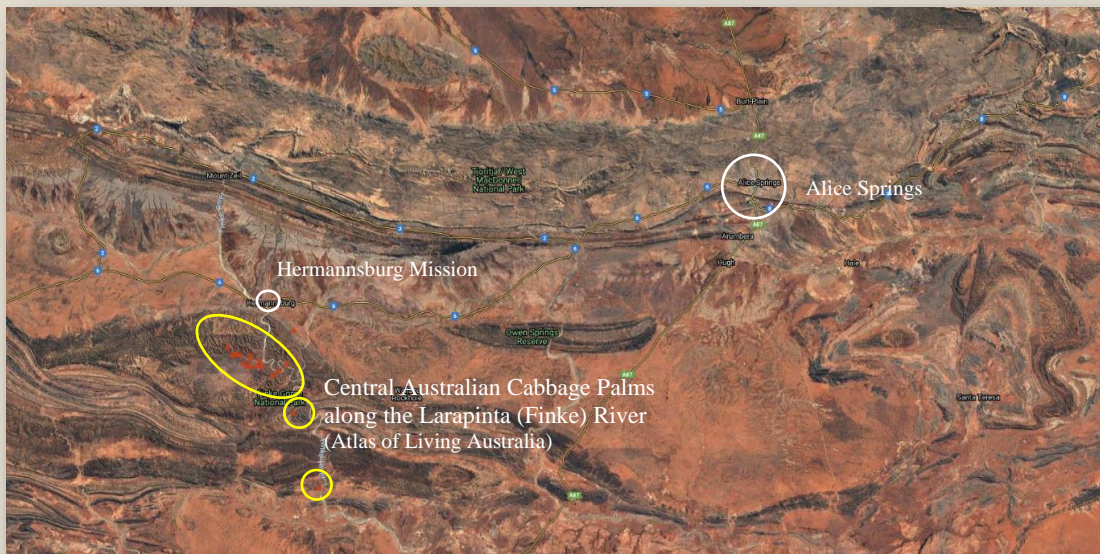
The continuing survival of the palms in Palm Valley can be attributed to a number of factors. Their roots are fibrous and shallow but they are located in an arid area, so need permanent, shallow water in an area large enough to support a viable breeding population. Percolation of water through the gently sloping Hermannsburg Sandstone formation provides a shallow but permanent water supply providing a stable environment of sufficient area to support a viable breeding environment.

Originally, the palms were thought to be a relict of a much cooler and wetter period in the Miocene when forests were widespread across Australia before the continent began to dry, about 15 million years ago.

However, these things are not always quite so straight forward. A recent study by a team of Australian and Japanese biologists, found that the Central Australian Cabbage Palm was genetically identical to the Mataranka Palm, *Livistona rigida*,



from the Roper, Gregory and Nicholson Rivers of the north. In fact, they were so closely related that they were able to decode that *L. mariae* diverged from the Mataranka Palms



somewhere between 30,000 to 15,000 years ago and the Mataranka Palm, because of its close relationship to the Central Australian Cabbage Palm, is now known as *Livistona mariae* subsp. *rigida*!

But how did the palms get to Central Australia in the first place? It seemed unlikely that they were carried on inland rivers as none link the Roper River to the Larapinta (Finke), and there are no intermediate populations of palms that might indicate dispersal by birds or bats.

The researchers did suggest a possible hypothesis, that the seeds were carried by humans, ancestors of indigenous Australians who migrated in waves to northern Australia some 45,000 to 40,000 years ago, and moved south to the centre of the continent 30,000 to 20,000 years ago. This hypothesis was considered when an Aboriginal myth came to the

attention of David Bowman, from University of Tasmania, in a 2013 translation of an 1895 text by German missionary and anthropologist, Carl Strehlow. For a time, Strehlow was based at Hermannsburg Mission and wrote of a visit to Palm Valley: *There are beautiful 40 to 50 feet high palms here surrounded by gum trees and acacias and the herbs and flowers at their base*



release a sharp smell. How this palm got into the interior of Australia has not been established yet by science. Strehlow went on to comment that according to traditional local beliefs, the gods from the high north brought the seeds to this place a long time ago.

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