

Encephalartos an Endangered Genus

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ABSTRACT

Gymnosperms are the tremendous products of the evolution, they have the reservoirs of the many kinds of the genes and the other metabolites of the medicinal significance. The era of the Mesozoic was the golden period of their development. Now they are under many kinds of the natural and the anthropogenic threats, IUCN declared these groups as the endangered species by the new version 3.1, well in this review articles we are presenting some of the aspects and conservation status of the genus termed as *Encephalartos*. This is the endemic plant of the South Africa; the South Africa is the centre of the origin of this Cycad. Well many of the tribal peoples are utilising this cycad from the thousands of the years for their own beneficiation and other spiritual purposes. This tremendous genus needs the conservation for the survival of the genus for the economic and evolutionary beneficiation

INTRODUCTION

Gymnosperms has the remarkable evolution history in the Mesozoic era, a long belt and perfect forms of the petrified and compression for of the fossils plants shows the fascinating group in the Triassic and the cretaceous's era of the Mesozoic. Now they are presented by the only some of the cladistic lines of the evolution like the cycadales and the conifealeas and the genetales (**Figure 1**).

Among them the lines of the cycadales is the very important, since they possess them any features of the evolutionary values, all the plant part form the roots to the seeds have the whole features of the evolution values and metabolites of the medicinal values (**Figure 2**).

There are only 11 lines of the genus which are present in the cycadales, majority of the cycadales are extinct in the Triassic and cretaceous era, however now the cycadales has the very relict distribution in the different part of the world.

LITERATURE REVIEW

In this review articles we are presenting the some of the aspects of the genus entitles as the *Encephalartos*. The genus *Encephalartos* comprises about the 68-70 species all over the globe and endemism can be seen in the South Africa. South Africa is supposed to be the centre of the origin of the Encephalartos^[1]. Majority of the species are distributed in the north and the South Africa. About 35 species has been reported in the only South Africa another some of the species can be found in the Ghana, Benin, and Angolas (**Figure 3**).

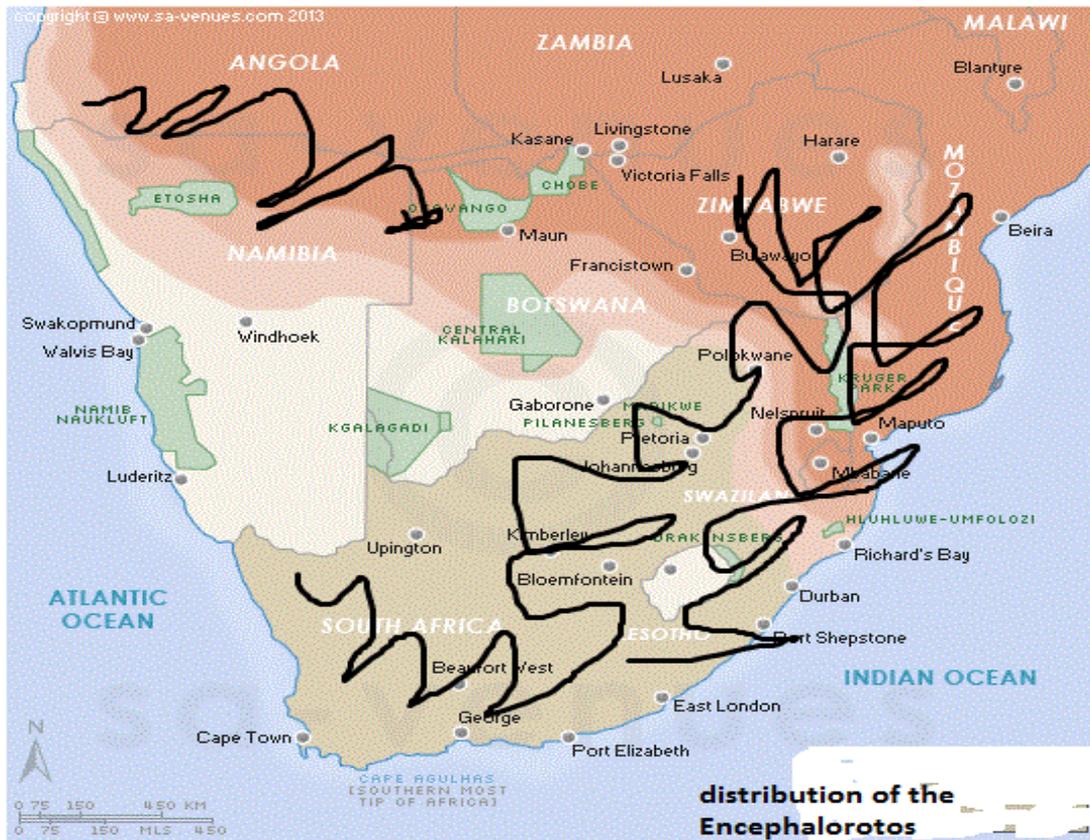


Figure 1. Presenting the distribution of the Encephalartos (sources south Africa explored sa venues.com). Black lines in the map are the distribution points of the Encephalartos.



Figure 2. Encephalartos garden (sources cycad pages).



Figure 3. Encephalartos plantation (sources Cycad pages).

The regional centres of the biodiversity are found in the South Africa where endemism is found and it is in peak ^[2]. In the South Africa content belt of the *Encephalartos* can be found from the north to the south area. Several species of the *Encephalartos* occurs in the form of the patches ^[3].

Some of the features of the *Encephalartos* are enlisted as.

- 1) They are the perennial trees.
- 2) Majority of the species are dioeciously. Both of the sexes are found on the separate trees.
- 3) Among the 40 species of the genus some of the species are underground and the other are the above ground, some of them are designated as the trees.
- 4) Majority of the *Encephalartos* are long lived, some of the species of the genus is of the 130 years long and in some of the cases 1000 species has been reported ^[4].
- 5) Pollination generally occurs by the Beetles, and weevils, and long weevils and cicadas.
- 6) However, reproduction occurs in majority of the species simultaneously.
- 7) The year when most of the plants bear cones, it has been termed as the cone-year.
- 8) The seeds viability depends on the population of the beetles, since for them the seeds of the cycads are sources of the food.
- 9) Seed predation is common in the *Encephalartos*, when weevils in the genus destroy majority of the seeds for the feeding purposes.
- 10) The dispersal of the seed is very less understood, the dispersal of the seeds occurs by the rodents and the birds and baboons.
- 11) Species of the *Encephalartos* occurs in the tree, garden, and Savannah.
- 12) The greatest diversity of the *Encephalartos* occurs in the savanna, since this is the open grassland and provides the place for the cultivation of the *Encephalartos*.
- 13) This cycad is known as the kaffir bread, due to the bread like pith of the stem of the genus.
- 14) In the south Africa the genus sustained the greatest diversity

DISCUSSION

Insects as the reservoirs for the different purposes. Threat factors: IUCN conservation status declares that there are many threats to the different species of the *Encephalartos*, 70% species of the *Encephalartos* are declared as the threatened with extinction, three of the species are declared as the extinct in wild, and some of the other species has been declared as the endangered ^[5].

Some of the main threats of the genus and their species are enlisted as:

- Habitat loss and degradation.
- Invasive alien species.
- Improper harvesting of the tree for the various purposes, some are for the hunting and other are for harvesting.
- Pollution of all kinds are another reason for their degradation.
- Others.
- Regular hunting.
- Deforestation.
- Utilization of the plants for the various purposes.
- Unplanned cultivation.
- Various natural factors like the beetles and the other insects.
- Loss of the species by many reasons.
- Construction of the small hydroelectric power plants and the mines are the reasons for the depletion of the vegetations,
- Construction of the road, reduces the cycad camps and reduce the vegetation

- Different kinds of the machines reduce the cycad belt.

CONCLSUION

So planned cultivation and the conservation of the plant is utmost urgency for the conservation of the plants ^[6].

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