

Stangeria: An Endangered Cycades

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Review Article

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ABSTRACT

Gymnosperms are the plants of the conservation of the evolution in there all plant parts; they have the good reservoirs of the metabolites and the other conserved sequences of the evolutionary values. These groups have the very fantascting ecosystems in the Mesozoic era. The appropriate reconstruction of the Mesozoic era gives the appearances of that evolutionary past. Cycadales are the living fossils and they are at the edge of the degradation, all of them totally 11 genera are existing, which have very narrow distribution in some of the area of the world. In this review articles we are trying to work on the one of the Cycadales entitles as the **Stangeria**. This is well distributed on the some of the area of the South Africa and some islands of the West Indies. Now this cycadales is at the junction of the disappearances due to the habitat destruction and the other anthropogenic activity. (IUCN endangered).

INTRODUCTION

Gymnosperms are the plants of the naked seeds with some anatomical differences form the angiosperms; they developed the large and the gigantism ecosystem in the Mesozoic era; however, one can see the declines in the fascinating line during the modern era. Gymnosperms dominate the earth for many millions of years, they have two liens of the evolution one of them is the cycadophytes and the another one is the coniferophytes liens of the evolution the anatomy. Cycadales and the conifers are very different in the morphology as well as in the anatomy as well as in the orientation of the reproductive cones and the ovuliferous scales. The conifers are still very dominated in the northern parts of the world while the cycadales are only represented by the some of the 11 geners's in the earth. Cycadales are generally unbranched stem and with the pinnate leaves with gigantic pattern of the arrangement. They have the (dioecious and Monoecious) male and female cones with the sometimes Megasprophylls and the microsporangia on the Microsporophylls. Here in this review article we are presenting some of the aspects of the cycadales known as the **Stangeria, this is the endangered cycadales with some of peculiar features (Figures 1 and 2).**

Stangeria is the one of the surviving gymnosperm of the order Cycadales, although the plant was reported till 18th century, but appropriate nomenclature was possible only after the 20th century. The plant has the fern like appearances, so previously it was assumed to be the fern or the pteridophyta, later on after findings of the cones on the plants it was regarded as the gymnosperms^[1,2,5]. It was identified as the fern and it was named as the **Lomaeria coriacea. It was described by the German botanist otto kunzae as a new species of the fern. It was Lomaria coriopus.** In 1829 it was identified as the cycades, when the pant started producing the cones^[1,2,5]. These observations was made by the Dr Stanger in chelsea, physic garden in London, it was described By the T. moore, however the exact nature of the cones and there gymnosermous Nature was identified by the Ballion^[1,3,4].



Figure 1. Stangeria cones (sources IUCN RED LIST).



Figure 2. Stangeria in wild (sources cycades pages).

Stangeria is the slow growing plant, it is perennial in nature, the body of the plant consist of large tuberous roots. They are carrot shaped, containing the reserve food material in the form of the starch and the other carbohydrates. This is the main part of the Cycadales due to which the tribal community utilizes the plants for the various purposes ^[1,2,6].

The upper portions of the branches of the plants is modified in to the branches. The leaves have the typical fern appearances. They are colored at the early ontogeny of the plants later on the leaves convert in to the green color. The leaves have the typical circinate vernation at the time of the early ontogeny later on they opened like the coil turned ^[7].

The stem has many growing points. On each growing point there is one cone. The plant produces the cones throughout the year, the number of the cones are 100-250 on the stem ^[8,9]. The plant is dioeciously, and the male and female cones are on the separate plants. The male cones are cylindrical, and they have long male microsporophyll on the them arranging in the spiral fashion. The tip of the microsporophyll is also the taxonomic values. On them the micorsporangia are arranged in the form of the groups and the sterile hairs can be found. (Typical cycadales nature) ^[10].

The female cones are egg shaped. They have the long megasporophylls of taxonomic values. They have the arrangement of the eggs or the ovules on the adaxial sides of the megasprophylls ^[11].

The structures of the gymnosperm are typical cycadales types ^[1,2,5].

DISTRIBUTION

Stangeria grows in to the open and the dry soil. The vegetation is the grassland types, in light soils, under threat. The plant is well distributed near the South Africa and the mozambae of the South Africa. This is the place where endemism of **the Stangeria** has been reported ^[2,5].

CONSERVATION

Although **stangeria** has the long evolutionary history and it was widely distributed in the 200 years ago, in the different part of the world, but now around 150 years ago the aboriginal peoples are utilising the plant for their own beneficiations ^[2,5]. So now around 54 percent of the habitat is destroying, now the species grow there are also disappearing, IUCN red data, list declared the **Stangeria** as the threaded species ^[2,5].

During the two decades ago under the IUCN version A² and A⁴ **Stangeria** has been regarded as the vulnerable genus ^[1,2,5].

Well in the south African and in the America the forest ecosystem of the **stangeria** are degrading with the great speed due to the various reasons for the various purposes, one of them is the constructions of the buildings and the other constructions. So, in the near future the genus is supposed to be the threatened ^[5].

In 1998 IUCN reported the genus as the vulnerable, later on the 2003 it was considered as the near to threatened (IUCN red data list 2010).

The data of the IUCN shows that during them any decades **the stangeria** is disappearing form then natural vegetation ^[1,2,5]. The main reasons of the disappearances of the vegetation is the habitat destructions and the construction work, in the Durban the heavy constructions lead to the disappeared in the Durban the heavy constructions lead of the disappeared of the may habitat if **the stangeria**, the vegetation of the **stangeria** is utilised for the formation of the grasslands of the sugarcanes and the other green plantations. Due to these reasons in South Africa very little vegetation exists. (IUCN red data list description 2010).

These are the few threats due to which the **stangeria** is the edge of the disappearances.

The future road constrictions of the coastal highway through the Eastern Cape have threatened the many populations in the area ^[5].

In addition, the increasing urban pressure in the cape area will also lead the disappearance of the **Stangeria** from the place or the habitat ^[1,2,5].

In that area around 34 places are which are the clump of the **stangeria**, **some of the threats of these clumps are enlisted as.**

1) 14 clumps are at the edge of the degradation, these are the populations of the stangeria, which are near to disintegration due to the heavy road constructions.

2) 14 other populations' if the **stangeria** are near to threat due to the agriculture of the different other crops of the human values. (IUCN RED DATA LIST 2010)

In addition to that there are many other reason for the disintegration of the **Stangeria** populations from the places. (IUCN red data list 2010).

Uses of the stangeria: The plant has the several medicinal uses, due to which any tribes of the South Africa utilize the plant for various purposes.

After the Second World War many of the scientist transport the plants for their botanical garden investigation, they transport the plants heavily ^[1,2,5]. This was the main reason for the disappearances of the plants from the habitat. The tribes of the Xhosa and the Zulu peoples utilizes the plants for their own beneficitions ^[1,2,5].

They utilise the plant for the headaches and the other purposes. 'However, one of the significant uses of the **stangeria** is that they are ornamental ^[2,5].

This is the remarkable plant of the cycadales and it needs the proper conservation.

Significance: **Stangeria** is the one of the great cycades in the gymnosperms, the plants was very highly distributed in the 18 centuries in the Africa and the other part of the world. The plants have its values for the ornamentation as well as the medicinal aspects, these lines of the cycadophytes are very important since they have the great reservoirs of the gens as well as the metabolites, as the cycades are near to the extinction, so these plants need the conservation and propagation for the maintenance of the lien of the evolution.

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