

***Bowenia*: A Taxonomically Less Defined Genus**

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Review Article

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ABSTRACT

Gymnosperms are the plants of the great antiquity; they have the tremendous kinds of the evolutionary pattern. Mesozoic era the age of the greatest development of the gymnosperm but in the cenozoic era one can see the tremendous decline in the great world of the giant Cycloclades and the conifers, now they are very relict in distribution, they can be found in the comes places of the India and the some places of the world like the USA and the other nations. due to change in the climate and the habitat destruction now they are at the junction of the disappearances, cycadales are considered as the living fossils, in whole of the globe they are presented by the only 11 genera of the rare taxonomic values, in this review articles we are working in the one of the genus entitled as the *bowenia* of the stangeriaceae family of the cycadales order of the gymnosperms, the genus has very narrow distribution and they are now at junction of the endangered by the version 3.1 of the IUCN red data books

INTRODUCTION

Gymnosperms are the plant of the great evolutionary history (**Figure 1**). They are the successful land plants; they have all the feature of the evolutionary values. However approximations towards the fruit have not reached here. The plant group has the long fossil history, now they are near the liens of the extinction. Majority of the fossil l genera are extinct during the beginning of the cenozoic era. Now days they are presented by the three lines of the cladistieces (**Figure 2**), these can be summered as

- 1) Cycadales
- 2) Coniferlaes
- 3) Gnetales.



Figure 1. Gymnosperm with cones (sources gymnosperm plant Britannica.com).

PARTS OF A GYMNOSPERM

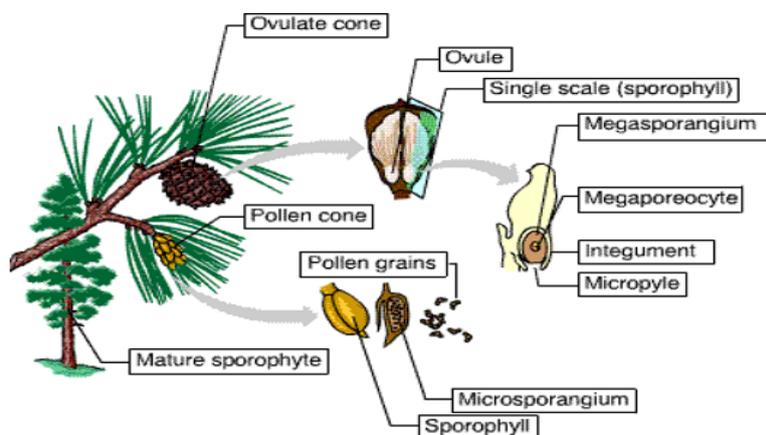


Figure 2. Gymnosperms plant parts names (sources gymnosperm-plantparthtml).

Cycadales are the assemblage of the living fossil s, in the Triassic and the cretaceous the cycidea has the long evolution and the giant genera's, however as the cenozoic era comes than one can see the rapid declines in the population of the *gymnosperms*. Now overall only 11 genera's of the *cycadales* has been observed in whole globe. They are presented by the some of the relict genera's of the unnatural distributions. In this review articles we are working on the one of the genus entitled as the *bowenia* is the prominent, this is the genus of the family stangeriaceae, order cycadales, natively pant grows in the forest of the Australia, the genus comprises of the two species and the tow of the fossil *genrea*'s. The classification of the *bowenia* are presented here as **(Figure 3)**.

- *Gymnosperm*
- *Cycadopsida*
- *Cycadales*
- *Stangeriaceae*
- *Bowendiadeae*
- *Bowenia*.
- *Spectibilis or Serrulata*



Figure 3. Bowenia spectabilis (sources. gymnosperm databases).

Bowenia grows well in the tropical rain forest of the Australia. They are restricted to the lowland of the forest of the Australia. *Bowenia* genus has the long fossil history^[4]. They were abundant in the Mesozoic era and they flourish well in the Eocene era and the fossil species of the *Bowenia* are represented as.

B. eocenica

B. papillosa



Figure 4. *Bowenia spectabilis* with cones (sources, whittaker Garry 2004).

The species of the *Bowenia* are reported from the New South Wales, The fossil has been found in the form of the leaf fragments (leaf compressions) ^[1].

Garry whittaker of the Australia (2004) done of the whole taxonomic account on the *Bowenia* .he worked on the whole of the populations of the *Bowenia* of the Australia. He takes in to consideration morphological, anatomical, biochemical and the molecular species for the analysis of the taxonomy of the *Bowenia*. The abstract of the Garry Whittaker (2004) work shows the taxonomy and the biology of the *Bowenia* in the Australia ^[2].

The genus is restricted to the small area and the moist places of the Australia. The genus is named after the sir George Bowen of the Australia (governor) name *spectabilis* refers to the name of the entire margins of the leaflets of the plants ^[1]. *Bowenia* is the slow growing cycadales . Reproduction occur in the plants only at once of the year. The pollination of the taxa was found to be the purely entomophilic. It is done by one of the weevil named as the *Mitotranum prosternalis* is demonstrated to be the pollinator vectors of the northern population of the hemisphere (Figure 4).

On the basis of the karyotype and the phylogenetic studies, it was revealed that both the species has the clear set of the chromosomes for the separation of the level of the species ^[3].

The plant has the typical cycadales morphology and the anatomy and the life cycles pattern. They have the dimorphic roots and the some symbiosis with the Nostoc. The stem is un-branched and has the armor of the persistent leaf bases of the Plant is used for many ways .one of the way of their utility is that for the purposes of the ornamental they are cultivated in the gardens and the other places ^[2].

The rhizomes are eaten as the raw for the eating purposes, the leaves extract are used medicinally ^[2].

The both of the species have the major threat with the growing construction work in the Australia and the Queensland, here the cutting of the forest ecosystem is the main reason for the disappearances of the species. Well red data list of the *Bowenia spectabilis* and the *Bowenia serrulata* are at the edge of the vulnerable version of the iucn (3.1), the both species need the conservation.

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