

# Endemism

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# What is endemism?

Endemism is the ecological state of being unique (native) to a particular geographic location, such as a specific island, country or other defined zone. ■

To be endemic to a place or area means that it is found only in that part of the world and nowhere else. ■

Endemic plants are those (whether ■  
members of a family, genera or species)  
peculiar or exclusive to a particular area.

They are plants which have either evolved ■  
within a particular area or plants which,  
because of barriers have been created  
subsequent to their migration, have become  
confined within a particular area.

For example, *Origanum* and *Majorana* are ■  
endemic to the southern Sinai Peninsula.

Physical, climatic, and biological factors  
are the main factors that contribute to  
endemism.

Endemics can easily become  
endangered or extinct because of their  
restricted habitat and vulnerability to the  
actions of man.

The difference between Endemics and Indigenous plants ■  
Endemic plants are not the same as indigenous plants — a species that is indigenous to somewhere may be native to other locations as well.

## The degree of endemism ■

It is the number of endemic species ■  
(expressed as a percentage of the total of  
all species in an area) depends largely on  
how  
effectively and for how long an area has ■  
been isolated.

Areas surrounded by oceans, extreme climatic conditions or extensive mountain ranges - limited by well-marked obstacles to migration - have been most favorable to endemism. ■

## How did the term "Endemism" start? ■

In a study of the families of flowering plants, ■  
Irmscher (1922) found certain ones are  
confined to large continental masses i.e.,  
endemic to them.

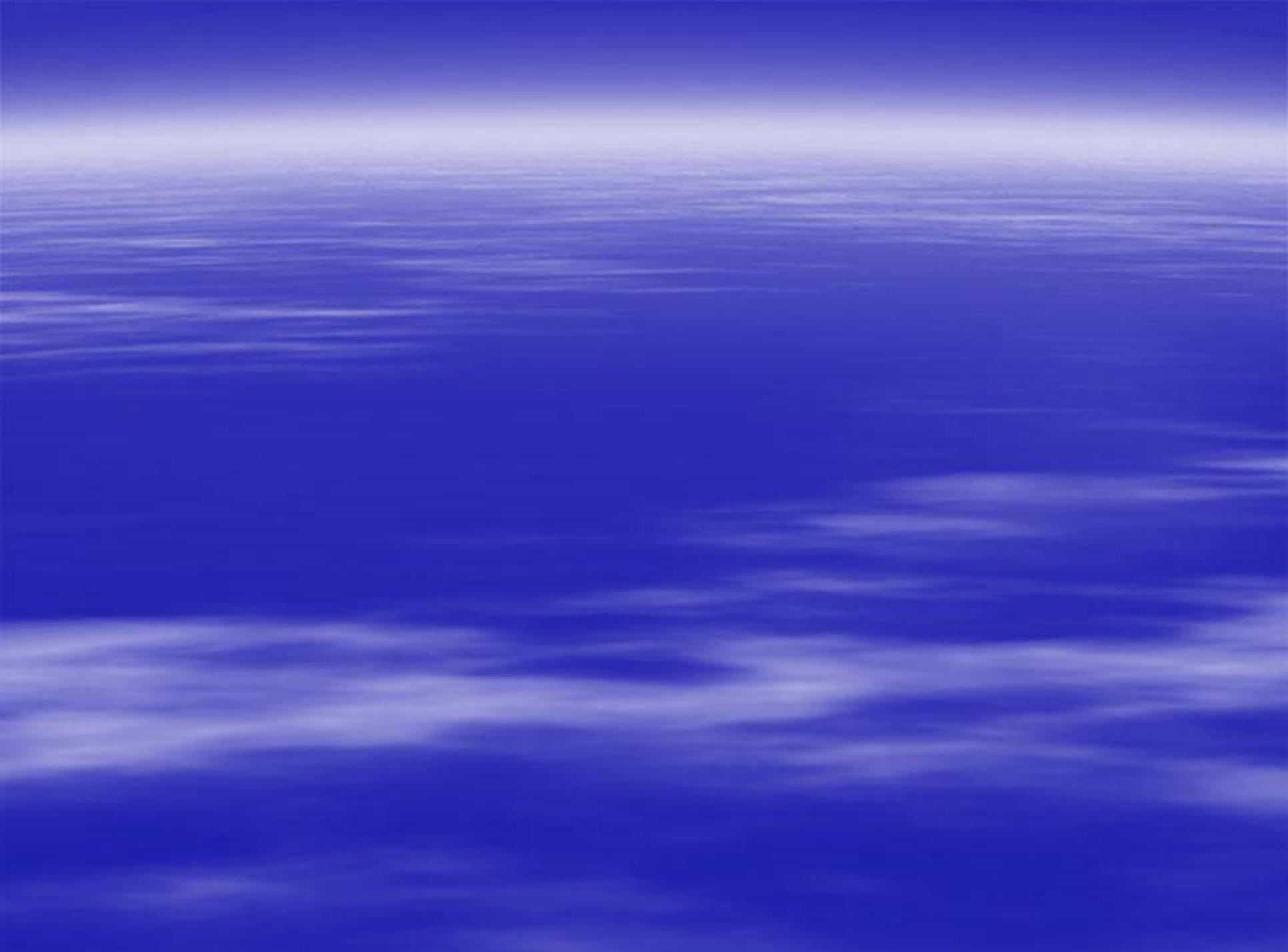
He divided the world into four large ■  
continental masses and found that 33  
families are endemics to the Americas, 16 to  
Europe-Africa, 7 to Asia and 5 to Australia.

The number of endemics and the percentages of them vary widely from region to another, depending largely on the history and conditions of the region. The conditions of endemism in islands are probably best known. ■

Skottsberg (1939) states that the flowering plant species of Hawaiian islands are nearly 90% endemics, that the genera are about 20% endemics and that many of them altogether lack close relatives. ■

Wulff (1936), gave the following list of endemic percentages for certain islands. ■

Mountainous lands and island in the seas ■  
(because their isolation) are favorable to  
endemism. In Egypt and Saudi Arabia the  
number of endemic species is high in  
mountainous areas like Sinai & Gebel Elba  
and in the mountains of the Red Sea coast.



# Types of Endemism

There are two subcategories of endemism according to taxonomic age:

## 1)Paleoendemism:

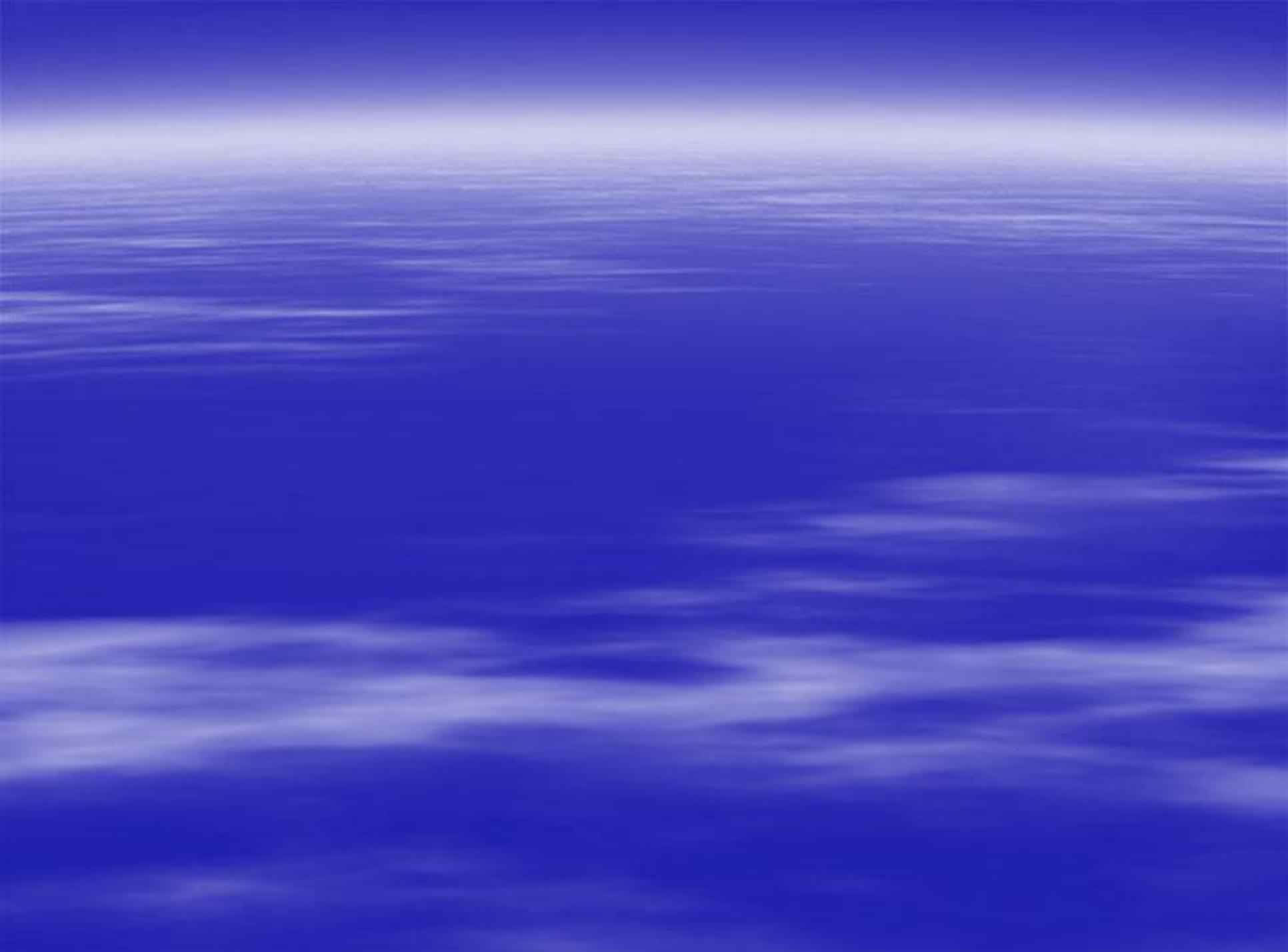
refers to a species that was formerly widespread but is now restricted to a smaller area (Old Endemics).

## 2)Neoendemism:

refers to a species that has recently arisen such as a species that has diverged and become reproductively isolated, or one that has formed following hybridization and is now classified as a separate species. This is a common process in plants especially those- which exhibit polyploidy (New Endemics).

## The Importance of Native Plants ■

- Plants are the basis of the entire food chain and oxygen in the atmosphere. ■
- Native plants require minimal fertilizer or irrigation. ■**
- Native vegetation, unlike cultivated landscapes, does not require the use of lawn maintenance equipment (a major contributor to air pollution and a source of climate change gases). ■
- promoting biodiversity. ■**
- have medicinal use like flavoring agents and drugs..... ■



## **Number of Endemic plants in Egypt ■**

In Egypt, a total of 2,121 species of native ■  
and naturalized vascular plants can be  
found and out of these, 54 are endemic  
(Madcour and Zeid, 1996).