

Seeds and Flowers The Eucalypt

Introduction

1. What does the study of this topics show us about God Himself?

God is the sustainer of life. He has built into the creation survival ability of living species, in very harsh conditions. The Eucalypt survives through drought, fire and snow. What does this say about God's ability to sustain us through life's difficult circumstances?

2. Which scripture passages illustrate this aspect of God?

Romans 8: 35-39 -Who can separate us from the love of Christ?

Psalm 1: 1-3 – Those who obey the Lord are like trees planted by a stream.

John 15 – Jesus is the vine

Exodus 15-16 – God sustained the Israelites through the desert.

3. How does understanding God in this way change our lives, or make us more like Jesus?

Like the Eucalypt, we can be determined to survive through thick and thin. Of course the Christian does not have to be self-sufficient. The Christian is connected to Jesus the vine. We can draw strength from Him, put our trust in Him, to survive through whatever difficulties come our way.

Seeds and Flowers

The Eucalypt

Name.....

The eucalyptus plant can grow to be a small shrub when mature or have its crown high above the forest protruding to the top of the canopy. It can grow in snow, wet tropical and very dry environments. They are evergreen.

1. Draw and label a eucalyptus flower. Mark in and name of the fused sepal/petal, stamen's anther and filament, and the pistil's stigma, style and ovary. Label the peduncle and receptacle. Comment on the absence of petals. Include a botanical scale in your diagram.
2. The flower has numerous fluffy and very bright stamens. What purpose do they serve in the absence of leaves?
3. The fruit of the flower, "the gum nut" has a cap called an operculum it can explode off or drop away to release seeds. Name some other seed vectors.
4. Lignotubers and ground seeds that germinate in the presence of a bushfire give the eucalyptus a competitive advantage in fire prone zones. Explain this statement. Highly flammable oil rises from the trees and the crowns explode sometimes so advancing fires. Some trees are annually deciduous of bark and this creates fuel for fires.
5. The leaves are waxy and this helps reduce water loss as well as reflecting heat. In some of the trees the leaves turn so that the leaf blade faces away from the sun across the day and only the edge is facing the sun. How does this serve the tree?

6. Dissect a moist bean seed and also a corn seed. The first represents a dicotyledon plant, the corn a monocotyledon plant of which many are grasses. Draw the seed to scale. Label the cotyledons, the seed coat, (testa), endosperm, embryonic root, and first leaves.
7. Remove the miniature plant inside the seed and put it under a low power microscope or hand lens. Draw this to scale.
8. When it snows in higher areas some snow gums still thrive. Ice freezes water making it difficult for roots to take in moisture and for the internal transport system to work. Xylem and phloem are frozen. How does the tree then survive? How do any species of flora survive sub zero conditions?
9. Think about the reasons for the planting of eucalyptus trees all over the world e.g. Israel, southern California? What properties do many have that makes them valuable in such dry climates? Here is some help with your answer.



Profile of Eucalyptus trees at sunset Bairnsdale, Victoria, Australia

Eucalyptus was brought to Israel from Australia. The purpose was to dry out the swamps in the North and so to get rid of the Malaria. Today the swamps are flood again as home and station for migrating birds. Malaria is mostly gone but the trees stayed! Since they were brought to the West in 1770, eucalyptus trees have played an important part in modern forestation. On the plus side, they grow quickly, give plenty of shade and dry the swamps; on the minus side, they're water-suckers that uproot paths and sidewalks. Nonetheless, the hardy *camaldulensis* "Red Gum" strain of eucalyptus is a staple component not just in landscaping and forestry but also industry, where it is a reliable, inexpensive source of wood, cellulose for paper, and oils used to produce cleaning and deodorizing products, food supplements; (such as cough drops), even mosquito repellent.

10. Jesus lived in a dry climate, where water is precious. If you live in a location of reliable rain you may take water for granted and wish for more sunshine. He described himself as the water of life, (John 4:14). Why is water the most important trigger to start germination? What else does the seed need beyond water to enable the juvenile plant to survive or is water alone enough. Can a plant grow in cotton wool and water adequately?
11. A tree is described in the beginning of Genesis and again in the Book of Revelation. Explain why this tree is firstly to be inaccessible and then later accessible to humans. Was it an apple tree or is this an invention of artists?
12. Frankincense or olibanum and myrrh were gifts of the Magi to baby Jesus. What plant products of what botanical species are they?
13. What does the study of the Eucalypt show us about God Himself?
14. Look up these scripture passages and explain how they show us that God sustains us and helps us survive through difficult circumstances.

Romans 8: 35-39 -Who can separate us from the love of Christ?
Psalm 1: 1-3 – Those who obey the Lord are like trees planted by a stream.
John 15 – Jesus is the vine
Exodus 15-16 – God sustained the Israelites through the desert.
15. How does understanding God in this way change our lives?

References

<http://asgap.org.au/eucalypt.html>

<http://www.abc.net.au/gardening/stories/s1866618.htm>

<http://en.wikipedia.org/wiki/Eucalyptus>

<http://www.botanical.com/botanical/mgmh/e/eucaly14.html>

<http://www.israel21c.org/bin/en.jsp?enDispWho=Articles^|2368&enPage=BlankPage&enDisplay=view&enDispWhat=object&enVersion=0&enZone=Health>