

Day 12 Plant Fossils Key

Fossil 1: *Dillhoffia cachensis*



About *Dillhoffia cachensis*:

- Approximate fossil time period: 49.5 MYA
- The fossil shows the part of the plant that creates a bud around a flower(sepal): a smaller, more complete one is on the upper left, and a larger, fragmented one. The **darkened areas are fruit**: the longer one is from *Dillhoffia*, and the others are stray fruits. **There are no petals present.**
- Climate around this time period saw a decline in global temperatures, going from a very warm to a cooler Earth.
- *Dillhoffia* is an extinct flowering plant from the **angiosperm** plant group.

The funnel-shaped sepals on a live tomato plant below are green. Petals on a flower are different colors. On this tomato plant they are yellow.



Fossil 2: *Annularia stellate*



About *Annularia stellate*:

- Approximate fossil time period: 310–280 MYA
- *Annularia stellate* leaves are arranged in whorls, similar to *Equisetum telmateia* (horsetails.)
- Three or more elongated leaves arranged in whorls radiate out from a central point, such as a stem.
- Leaves have one single vein.
- The climate was warm, with swampy land and dense forests.
- *Annularia stellate* is an **extinct vascular horsetail plant**.

This is a living horsetail plant.



Fossil 3 cycad (L) and fern (R)



About cycads and ferns:

- Approximate fossil time period: 165–00.5 MYA
- Both the cycad (**gymnosperm/vascular plant**) and fern (**vascular plant**) have simple pinnate-arranged leaves.
- **Cycad leaves are thin** and taper upward to a point. **Fern leaves appear more oval**, more cylindrical, with a tapered end and flat base.
- At the beginning of this time period, the climate was warm and wet, with vast tropical areas. By the end of this time period, the climate began heating up and reached levels much warmer than present day. Sea levels were high.

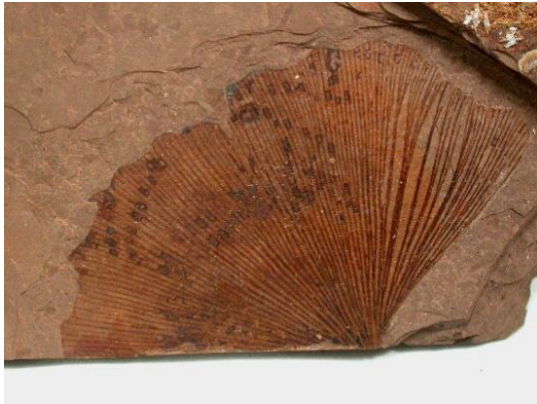
Living cycad



Living fern



Fossil 4: *Ginkgo biloba*



About *Ginkgo biloba*:

- Approximate fossil time period: 56–33.9 MYA
- *Ginkgo biloba* leaves are fan shaped. Veins are fork into pairs from the base of the leaf.
- The climate during this time period ranges from the warmest to the coldest. Ice begins to form at the polar regions around 34 MYA.
- *Ginkgo biloba* is a **gymnosperm**.

Living *Ginkgo biloba* leaves.



FIGURE CITE KEY

Figure 1

URL: https://commons.wikimedia.org/wiki/File:Dillhoffia_cachensis_SR_92-17-20_1.jpg

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Tomato plant

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Figure 2

URL: https://commons.wikimedia.org/wiki/File:Annularia_Stellata.jpg

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Horsetail plant

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Figure 3

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Cyad

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Fern

American royal fern (*Osmunda spectabilis*) has leaves similar to the fossil fern. URL:

https://commons.wikimedia.org/wiki/File:Osmunda_spectabilis_close_up.jpg

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Figure 4

URL: https://commons.wikimedia.org/wiki/File:Ginkgo_biloba_MacAbee_BC.jpg

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Ginkgo biloba

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