

Gnetophyta - 1

Gnetophyta

The members of the Gnetophyta are a "weird" group of plants. They are the most recently evolved vascular plants; the first fossils post date flowering plants, being only about 50 million years old. They have some characteristics in common with gymnosperms, and some with angiosperms, notably the presence of vessels in their xylem, and in the case of *Ephedra*, double fertilization (except that it produces more embryos, not a nutritive tissue). Nutrition for embryos is provided by the female gametophyte.

There are three representatives in the Gnetophyta

Ephedra

Ephedra is an arid-land shrub, with one representative in the United States found throughout the southwestern deserts. It sort of resembles a dry Scot's broom with no leaves. *Ephedra* has a sticky tube that extends from the archegonium to receive pollen. *Ephedra* is commonly called Mormon Tea. An Asian species is a natural source of ephedrine, a mimic of epinephrine and is widely marketed for a number of uses, including weight loss. Sale of herbal supplements containing ephedra is now banned in the United States by the FDA after several deaths were attributed to its use.



Ephedra



Gnetum

Gnetum

Members of the genus, *Gnetum*, are vines or shrubby trees of the wet tropics of Indonesia, South America and Africa.

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Welwitschia

Welwitschia is restricted to the Namib desert of Namibia and adjacent regions of southwestern Africa between 14° – 35° S Latitude from the western coast to 100 miles inland in areas of about 2" of annual precipitation. *Welwitschia* has two large, basal strap-shaped leaves that grow from a meristem on its basal stem. It has a deep taproot that grows down toward the water table. The leaves become shredded at the tips with time and the plant appears to be a rosette of many leaves. For reproduction *Welwitschia* has an female tube which grows to meet the pollen tube for reproduction.



Welwitschia mirabilis



Male Strobilus



Female