

3/21/2004 Ephedra- A Stimulating Plant in the Arid Dome - ARID DOME

Advertisements for diet pills now proclaim that they are "Ephedra-free." Did you know that *Ephedra* is a plant that grows in the Arid Dome of the Mitchell Park Horticultural Conservatory? There are about 60 species of *Ephedra* worldwide, but they all live in arid or desert climates.

*Ephedra* species are famous as medicinal plants wherever they are found because of the tannins and alkaloids that the plants produce. Such compounds are thought to be defense mechanisms against pests and pathogens. Caffeine (in coffee) and nicotine (in tobacco) are famous examples. Some *Ephedra* species produce ephedrine and pseudoephedrine compounds that have effects similar to adrenaline. These are used as an herbal stimulant and for other medical uses. Prescription drugs derived from these powerful compounds are used for asthma, allergies, and raising blood pressure. Like many medicinal plants, *Ephedra* species can be very dangerous if taken in large quantities or given to children. Dosing of medicinal plants is difficult because the concentration of the active ingredients varies with the age and growing conditions of the plant, and different active compounds are found in different *Ephedra* species.

*Ephedra nevadensis* is the species growing in the Arid Dome. Its common names are joint-fir or Mormon tea. American species of *Ephedra* are found in the southwestern states. These plants are well adapted for life with little water. The apparently jointed stems branch profusely and have small, scalelike leaves. Water is conserved when the leaves have less surface area for evaporation. *Ephedra* species are all woody shrubs that do not exceed about three feet in height. They are related to conifers, ginkgos, and cycads. *Ephedra* species reproduce by producing small cones, each of which has one or two brown seeds. Seeds are produced only on the female plants. The plant in the Arid Dome is female. Separate male plants produce pollen that is carried by wind to the female plants. Scientists believe that *Ephedra* species may be closely related to the flowering plants because their wood structure and fertilization process is similar. Look for this amazing plant on your next visit to the Arid Dome.