Of interest this week at Beal...

Ginkgo

Ginkgo biloba

Family: the Ginkgo family, the Ginkgoaceae
Also called: Maidenhair tree

The unique gymnosperm tree, *Ginkgo biloba*, is often introduced as a ‘living fossil.’ In this case, the designation is quite correct. Fossils from this formerly large group have been found from the late Permian period, more than 250 million years ago. This allows the claim that *Ginkgo* is the extant genus with the most ancient direct lineage. (A similar claim for the inarticulate brachiopod genus *Lingula* from the Ordovician period may be less well supported.) Fossil species of ginkgophytes are known from virtually every continent. They apparently achieved their peak diversity from the late Jurassic to the mid Cretaceous (approximately 160 to 80 million years ago). Though the ginkgo has no remaining close relatives, the cycads are considered distantly related.

This only surviving member of the ginkgophytes has been cultivated in its native China since at least 1100 A.D., often as a temple planting, although some trees there are reputed to be 4000 years of age. Its seeds were carried to found populations in Japan and Korea shortly after 1190 A.D. It is widely reported that *Ginkgo biloba* has survived only as a cultivated entity with no wild populations remaining, although some candidates debated as wild stands may occur in western Zhejiang Province in China.

The first Westerner to take note of the ginkgo was the German Engelbert Kaempfer in 1691. He brought seeds to Europe in the early 1700s and some had reached North America later that century. It was quickly appreciated that these stately and long-lived trees were impressive. However, in the West, males were planted as the preferable gender because on females, the fleshy arils surrounding the seeds and produced by the thousands in autumn were exceptionally rank and smelly due to the presence of butyric acid, the aroma component of rancid butter.

However, in the East, the females are preferred because of the edible (after cooking) kernel within the almond-sized seed. They are a prized delicacy, especially at wedding celebrations, but not usually eaten in quantity. Occasionally raw seeds are
The reproductive male and female parts of Gingko occur on separate individuals. The male ‘cones’ (inset photo below) release their pollen into the wind in April and May. Fertilization actually occurs from September to October, culminating in plum-like arils.

consumed to expel intestinal parasites. Leaf extracts have recently been employed medicinally to expand tiny blood vessels to improve brain, and other fine-vessel circulation, but much analysis is still ongoing.

In 2002, Trémouillaux-Guiller et al. (Amer. Jour. Bot., v. 89) discovered that ginkgo cells harbor the only known eukaryote alga endophyte known to science. The alga seems related to Coccomyxa, a known partner (symbiont) in lichen formation.