

## A NEW FIND OF EARLY ANGIOSPERM FOSSILS

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Hot from the press (Ge Sun et al. 3 May 2002) is some exciting news about c. 125 million year old fossils from northeastern China. Two species, placed in a new genus *Archaeofructus*, provide definitive information about an angiosperm manifestation in a period gauged to be of uppermost Jurassic or lowermost Cretaceous age. These beautifully preserved fossils also create confusion about some aspects of how “angiosperm” is to be defined.

The fossils occur in fine siltstone and include connected stems, leaves, roots and reproductive structures (Fig. 1). The roots are small. This and the herbaceous nature of the plants, with their much-dissected leaves, inflated petiole bases (and the occurrence of fish fossils in the same deposits) suggests strongly that the plants grew aquatically, possibly with the reproductive structures projecting above the water surface.

The reproductive systems lack sepals and petals. Unlike those of any living angiosperms there are numerous follicle-like carpels arranged spirally, or in whorls, spread along an elongated terminal axis. Also, unlike all other known angiosperms, the stamens occur in short-stalked pairs spread along the axis beneath the carpels. Can these assembled reproductive structures, strictly, be regarded as flowers? Shortening of the axis would make them more flower-like.

One of the defining features of the angiosperm Class of plants has been the occurrence of flowers and, if these fossils really do represent angiosperms (as their carpels, seeds, stamens and pollen strongly indicate), then the concept of the flower must be stretched a bit. Perhaps this does not matter too much. After all, the term flower already covers very wide range of alternatives. Think, for example, of grasses, birches, arums and roses.

### REFERENCE

Sun, Ge; Ji, Qiang; Dilcher, D. L.; Zheng, Shaolin; Nixon, K. C.; Wang, Xinfu 2002: *Archaeofructaceae*, a new basal angiosperm family. *Science* 296: 899–904.



**Fig. 1.** *Archaeofructus sinensis*. c. carpels; s. stamens

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**Correction**

Susan Wiser 2001: Montane Rock Crops: Islands of Biodiversity on Banks Peninsula.  
*Canterbury Botanical Society Journal* 35: 32–36.

The following species were incorrectly included in Table 1 of this paper in Journal 35:  
*Carex demissa*, *Coprosma cuneata*, *Coprosma tenuifolia*, *Dracophyllum unifolium*,  
*Geum uniflorum*, *Poa anceps*, *Trichomanes strictum*, and *Uncinia filiformis*.