

**New England Botanical Club – Minutes of the 1012th Meeting
2 December 2005**

Karen Lombard, Recording Secretary

The 785th meeting of the New England Botanical Club, being the 1012th since its original organization, was held on Friday, December 2, 2005, in the Lecture Room of the Fairchild Biochemistry Building, Divinity Avenue, Cambridge, MA. There were 36 members and guests in attendance. Announcements included NEBC's inclusion in the Catalogue of Philanthropy, a compilation of charities that gets sent out to high-income residents of Massachusetts each year. One new member was announced, David Ellum, who will be our February speaker and who was a recipient of an NEBC graduate student award. Our January meeting will be our annual potluck ("Sixth segue into sustenance and selected species"), which all are welcome to attend starting at 5:30. Members will present slides of recent botanical trips after the potluck.

Karen Searcy introduced Dr. Kyle Williams, who gave a talk titled "The Gingers of Southeast Asia: A Spicy Tale." Dr. Williams is currently a post-doc at Harvard University/Arnold Arboretum and is working on the flora of peninsular Thailand. For his doctoral work, he investigated the systematics of the Genus *Globba* in the Zingiberaceae (Ginger family). He presented an introduction to and tour of some of the highlights of the Zingiberaceae, as well as describing some of his travels in search of members of this family.

Gingers are pantropical herbaceous monocots (53 genera, >1500 spp.) that have some of the most complex floral morphology known. Most species fall within two major subfamilies, the Alpinoideae (evergreen) and the Zingiberoideae (evergreen only in certain climates). Although the family occurs in tropical regions worldwide, the majority of the taxa are native to Asia, with the center of diversity being Thailand and Burma. Most species are subtropical with only one genus, *Roscoea*, being truly temperate (occurring up to 5000 m in the Himalayas). The family most likely originated in Asia or Africa. All species are rhizomatous and most occur as a prominent part of the forest understory. Most species have colorful flowers, scented leaves, and creeping rhizomes. Flowers often bloom on side shoots coming off of the base of the plant rather than off of leafy stems. Some of the best-known species include the edible ginger (*Zingiber officinale*), turmeric (*Curcuma domestica*), and cardamom (*Elettaria cardamomum*). Many other species are cultivated by gardeners for their beautiful flowers. Bananas, bird of paradise, and heliconias belong to the same order as gingers, the Zingiberales.

Surprisingly, the family is poorly known and new genera are still being discovered. Dr. Williams described many examples where specimens have not been collected for 50-100 years. Many rare and undescribed species show up in weekend Bangkok markets and botanists have to act as detectives to trace the plants back to their collection locations.

Gingers are morphologically quite complex. The true stems are rhizomes, with the above-ground pseudostem being composed of leaf bases. The showy flowers have 5 stamens that are modified into petaloid staminodes. One stamen per flower is fertile and its anther often supports the style. Identification is based primarily on lateral staminodes, inflorescences, bract shape, inflorescence position, and anther shape. The flowers last one day, but the inflorescence may persist for a month or more in some species because the flowers bloom in succession. Bees are the most common pollinators.

After the introduction to the family, Dr. Williams led us on a tour of some of the most interesting genera. The genus *Globba*, the focus of his doctoral research, has over 100 species. Most of the flowers are pendulous, with colorful bracts and long, hooked stamens. One group of *Globba* species, previously classified in the genus *Mantisia*, blooms on leafless stems and has lateral staminodes on a filament. The genus *Curcuma* (turmeric) is taxonomically complex and has the complicating factor of being relocated by humans as it was cultivated. *Hitchenia* has a beautiful white flower that is probably hawk moth pollinated. This species was recently re-collected for the first time in over 100 years. *Etingera*, the pink torch ginger, has a big, dense inflorescence that sometimes flowers right off the rhizome at ground level. *Hedychium* is probably the most commonly grown genus as it can be grown in the subtropics. Dr. Williams described a new epiphytic species in this genus that was discovered on one of his trips. The genus *Alpinia* currently is very complex taxonomically, as it tends to be a catchall for species that could not be assigned to other genera easily. This genus is evergreen and has no lateral staminodes. The genus *Kaempferia* has strange, orbicular leaves that hug the ground and staminodes that look like 4 petals.

Dr. Williams concluded his talk with wonderful slides of some of the cultural sites (temples, pagodas) and waterfalls, as well as slides of some of the people of Burma and Thailand. He also described some of his adventures exploring forests and rivers in search of gingers. Burma, in particular, was the highlight of his travels due to the friendly people and rich forests that have been little explored.