

New England Botanical Club - Minutes of the 1004th Meeting

4 February 2005

Robert Bertin, Recording Secretary, *pro tempore*

The 777th meeting of the New England Botanical Club, being the 1004th since its original organization, was held on Friday, February 4, 2005, in the Lecture Room of the Fairchild Biochemistry Building, Divinity Avenue, Cambridge MA. There were 32 members and guests in attendance. It was announced that our scheduled presentation on gingers by Dr. Kyle Williams was postponed because he was in Thailand but that an equally exotic presentation had been arranged.

Dr. Lisa A. Standley shared with the Club her experiences on her latest foreign excursion in a talk entitled "Lemurs, Lianas, and Lizards: A Natural History Tour of Madagascar." She began with a brief introduction to the island, which has an area similar to California and lies 300 miles off the coast of southeast Africa. Of particular importance to the biota of Madagascar was its long history as part of the great southern continent, Gondwanaland. Although Africa separated from Gondwanaland over 150 million years ago, Madagascar, along with India and South America, remained attached for another 50 million years or more. Thus Madagascar has greater biological affinities with these two land masses than with Africa, even though it is much closer to the latter. You can, for example, find boas in both Madagascar and South America, but nary a one in Africa. The island is varied in topography and climate, with sites on the east coast receiving several meters of rainfall a year, while the mountainous spine of the island creates a rain shadow, producing arid conditions in the west.

Humans have apparently occupied Madagascar for scarcely two millennia and the original residents came from the east, not from Africa. The first colonists brought with them customs and traditions reminiscent of India and even Indonesia, and they settled largely in coastal areas. More recent arrivals from Africa brought with them a subsistence culture emphasizing cattle, and settled more in the uplands.

The current population of Madagascar is young, with over half of the residents under 15 years of age, and poor, with a per capita gross domestic product of only \$240 per year. Of the 20,000 fishing vessels sailing from the island, only about 200 are motorized. Slash and burn agriculture is widely practiced, even in areas designated as parks. Extensive deforestation results from the production of charcoal, the primary fuel. Only 18% of the island's primary forest remained in the 1970s and the number is substantially lower today. Erosion of the exposed red lateritic soils is extensive in deforested areas, producing a red halo in the coastal waters around the island, visible from outer space during the rainy season.

Despite the extensive and growing human imprint on the island, species richness is impressive, though poorly known, and levels of endemism are especially high. The 12,000 described vascular plant species (of which 80% are endemic!) exceed the number in California's better known flora by several thousand. The number of orchid species exceeds the number for the entire African continent. Pteridophytes number over 600 species, with 75% endemic.

Dr. Standley presented slides showing a wide range of cultural and biological subject matter. They revealed the traditional mud brick construction and thatched roofs of inland houses, the rickshaws and oxcarts that provide much of the island's local transportation, and the terraced rice paddies of hill villages. She visited and documented habitats ranging from mangrove swamps (favored by roosting whimbrels) to high elevation savannas with a liberal sprinkling of palms, to spiny scrub deserts with a coterie of euphorbs, to tropical rainforests with buttressed trees and numerous lianas, to wetlands with several familiar genera including *Typha*, *Phragmites*, *Scirpus*, and *Cyperus*. Seasonal dry forests harbored several species of baobabs, whose swollen trunks store water to help them survive the dry season. Dr. Standley also shared pictures of the rosy periwinkle (*Catharanthus roseus*), native only to Madagascar, though now widely distributed in the tropics, and a source of at least two anti-tumor drugs. She photographed several orchids, including a member of the genus *Angraecum*. It was the narrow foot-long spur of *Angraecum sesquipedale* that led Darwin to postulate the existence (later verified) of a moth pollinator with proboscis of similar dimensions.

Dr. Standley's attentions were not directed solely to the green part of the landscape. Birders dominated this tour and in between orchids and sedges she made observations of numerous bird species, including representatives of some of the 6-7 endemic families. Herps also figured prominently in the visible fauna, including snakes (all are nonpoisonous here), tree geckos masquerading as lichens, tree frogs resembling the poison arrow frogs of South America and the always inscrutable chameleons. To many people, lemurs are the quintessential Madagascar fauna. The 50 species of these primitive primates are restricted to Madagascar and nearby islands, and Dr. Standley photographed several of these, ranging from the tiny mouse and dwarf lemurs to the indri (noisy and tailless, the largest of the lemurs) and the photogenic, ground-dwelling ring-tailed lemur.

A trip to Madagascar is a treat for any naturalist, but Dr. Standley urged interested parties to make their plans soon. Subsistence farming and charcoal making by the expanding population are rapidly destroying natural habitats and the highly distinctive biota is depleted with each passing year.