

DIVERSITY

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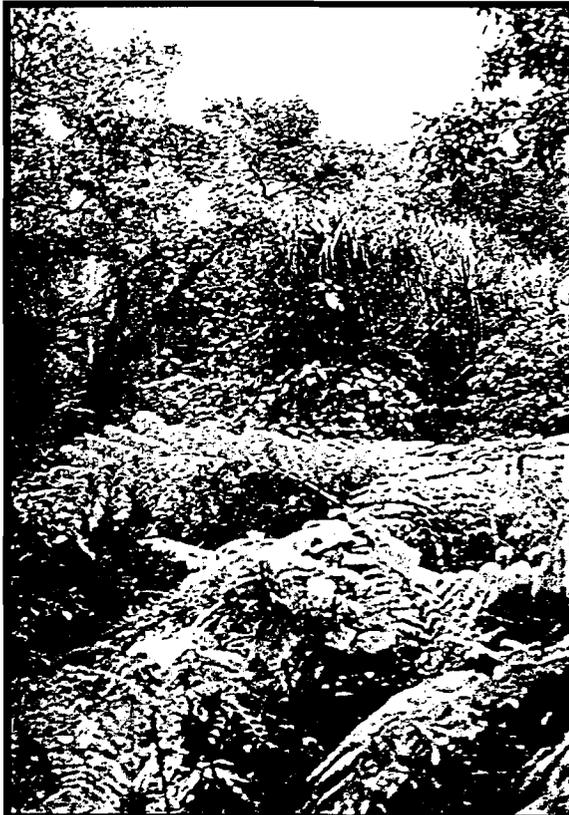
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What's Up?

Forest Canopy Scientists Convene for First Time at Selby Gardens

Jumars, carabiners, pole pruners, tree bicycles, boatswain's chairs, booms, peconhas . . . these terms are not listed in most biological dictionaries. Nor are construction cranes, large treehouses, or hot-air dirigibles listed as priority equipment for any scientific laboratories. But these are the essential tools required to provide some of the exciting results reported at the First International Forest Canopy Conference held in November 1994 at Sarasota, Florida.

The Marie Selby Botanical Gardens hosted this landmark international gathering, entitled "Forest Canopies: Biodiversity, Ecology, and Conservation." Scientists from over 28 countries convened to discuss important global issues related to research and management of the world's forests, both tropical and temperate. The major aims of the conference were to facilitate the exchange of both ideas and access techniques among an evolving cadre of biodiversity specialists known as canopy scientists.

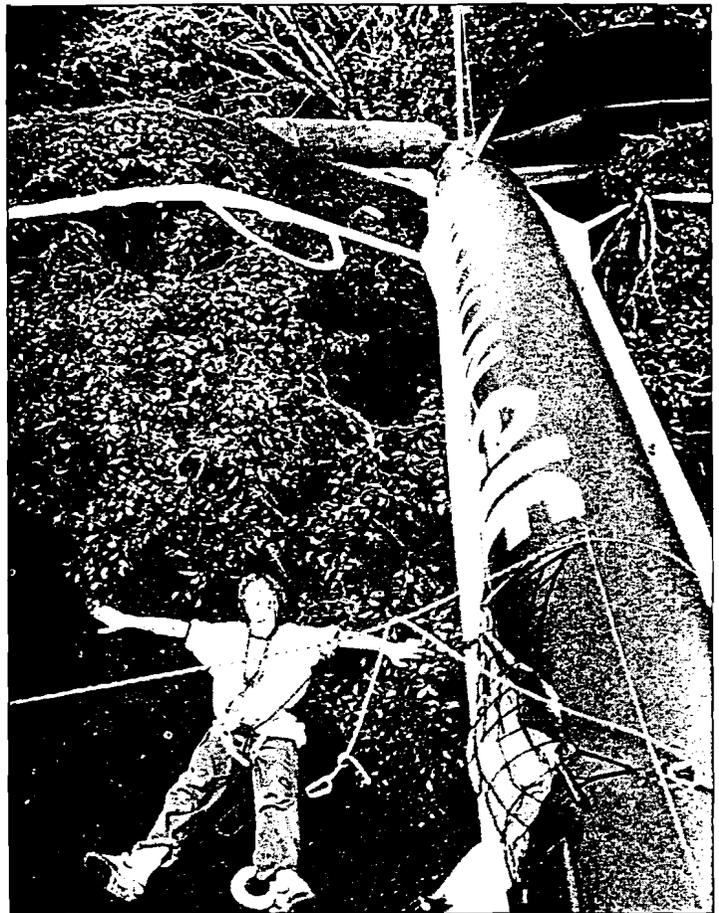
Over a four-day period, delegates debated the number of species on Earth; established priorities for a canopy information and communication network; shared information about different techniques of canopy access; and assessed research priorities for future canopy studies.

The conference has been in the planning stages since 1991, when, in a hot air balloon over Cameroon, the co-chairs, Professor Francis Hallé of Institut de Botanique of France and Dr. Margaret Lowman, Director of Research at Selby Botanical Gardens, first met while studying equatorial African rain forests. Professor Hallé is a specialist in canopy architecture who also developed the famous dirigible for canopy studies and Dr. Lowman has studied herbivory in most forest types throughout the world and pioneered the use of canopy platforms and walkways. Both scientists recognized that since most canopy biologists (like themselves) work in very remote situations, the majority of important pioneers in this relatively new biological frontier had never met one another.

The co-chairs met in a hot air balloon over Cameroon.

The atmosphere was enthusiastic and almost electric during the five days in Sarasota, as the "arbornauts" (as they call themselves) discussed their pioneering work, the majority of which is still in progress. Many scientists, literally in the midst of some innovative and new research, traveled from their remote field sites to attend, thereby attesting to the infancy of this science.

Sessions were organized to cover a broad spectrum of research: Canopy Architecture, Population Dynamics of Canopy Organisms, Conservation of Forest Canopies, Canopy Environments and Environmental Interactions, the Ecology of the Subcanopy, and Canopy Processes. Notable speakers included the pioneers of canopy research: Donald Perry of Costa Rica, Andrew Mitchell of London, England, Mark Moffett of Harvard University, and Nalini Nadkarni, Evergreen State College, Olympia, Washington, who is co-editor of a forthcoming book on forest canopies.



Dr. M. Lowman atop the forest canopy. 150 feet up, in the African Cameroon rainforest. She is floating in a canopy "raft" lowered from a blimp that was conceived by Dr. Hallé.

(Photo by B. Rinker)

The debate about biodiversity was very lively, particularly among those scientists who attempt to measure arthropods in the treetops. Dr. Terry Erwin, Smithsonian Institution, Dr. Nigel Stork, Museum of Natural History, London, Dr. Dave Walter, Queensland University, Australia and Dr. Jack Schultz, Penn State University, to name but a few, were present. Dr. Bernard Ngynomeck of Cameroon and Dr. John Hart of Zaire both agreed that African rain forests are vastly understudied. Most participants agreed that more inter-continental and inter-forest comparisons are urgently needed in order to better understand forest dynamics.

There was also time for an unusual report. Dr. Donald Perry, a pioneer in canopy research, has developed the Rain Forest Aerial Tram, a ride near Baulio Carrillo National Park in Costa Rica that takes tourists and researchers for a cruise through the forest canopy.

Canopy Methods Workshop Reveals "Secrets" in the "World-Within-a-World"

The field of canopy research, which had previously been restricted to brave and nimble scientist-climbers, has become safer over the last decade because of the use of dirigibles, ski lifts, towers, platforms, and cranes. The result is a more scientifically rigorous view of the world-within-a-world of the forest canopy. Therefore, one of the conference highlights was a Methods Workshop, organized by Bart Bouricius of Canopy Construction in Amherst, Massachusetts. Utilizing the extensive stands of banyans throughout the grounds of Sarasota's Selby Gardens, con-

ference participants demonstrated different techniques of canopy access and shared "secrets" about such important logistic considerations as how to secure a rope on a branch 40 m overhead. Tours were also conducted up to the new canopy platform, situated approximately 14 m up in the crown of a live oak in Selby Gardens. Canopy films and even canopy banquet menus were also featured throughout the conference.

Participants achieved their primary goal of meeting and interacting with other scientists in this new biological frontier. They also went away with better ideas for canopy access. Priorities identified for the immediate future include developing methods workshops in tropical countries so that local biologists can more easily study the canopy; improving communication among canopy scientists through computer networks; seeking to employ adequate replication and careful experimental design in canopy field studies; and disseminating results for conservation purposes and to facilitate the management of forest resources in both tropical and temperate regions.

During the summary session of the conference, it was agreed that a second meeting should be held in three years, probably



SELBY GARDENS

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again at Selby Gardens and perhaps including a field trip to a tropical canopy research site. The conference proceedings will be published in Selby's botanical journal, *Selbyana*.

Funds to facilitate the attendance of canopy scientists from developing countries were obtained from the U.S. National Science Foundation and the Biodiversity Support Program in Washington, DC (see *DIVERSITY*, vol.10,no.2,pp.28-31). The Conference Steering Committee under the leadership of co-organizers Hallé and Lowman included: Dr. S. Joseph Wright, Smithsonian Tropical Research Institute, Panama; Dr. Geoffrey Parker, Smithsonian Environmental Research Center, Maryland; Dr. Phyllis Coley, University of Utah; Mr.

Bart Bourcius, Canopy Construction Associates; Dr. Mark Moffett, Harvard University; and Dr. Kathy Saterson, Biodiversity Support Program, Washington, DC (see *DIVERSITY*, vol.9,no.4/vol.10,no.1,p.22).

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