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The Raft in the Treetops

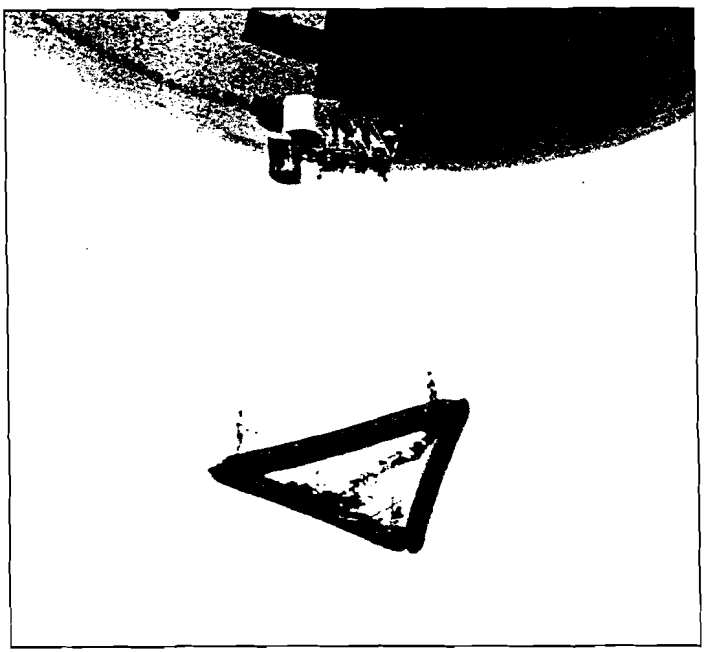
by Meg Lowman

For tropical biologists, entering the rain forest is a relatively easy affair, but accessing the treetops has proven difficult at best. The canopy, however, houses the majority of animals and plants living on Earth (an estimated 32.5 million at last count). Ropes, walkways and cranes are some of the varied methods employed by biologists for studying forest canopies. But perhaps the most innovative method is an invention of Dr. Francis Halle of the Institut de Botanique (France), christened Operation Radeau des Cimes. Translated as raft in the treetops, this equipment comprises a colorful dirigible (capacity of 7,500 cubic meters and top speed of 30 kph), a 600-square-meter raft weighing 750 kg and a newly-designed triangular sled (5 m by 5 m by 5 m).

I was fortunate to be selected as part of the scientific team to study with Radeau des Cimes in the equatorial forests of Cameroon, Africa, during November 1991. Approximately 60 biologists participated in this international expedition funded by ELF foundation, a European petrochemical philanthropy. I was responsible for studies of the canopy foliage and plant/insect interactions, a daunting task, but certainly logistically feasible with the unique balloon and raft apparatus! I was allowed to bring two assistants, and our trio logged many hours in the canopy undertaking a range of activities: sampling leaves, measuring herbivory, sweep-netting and fogging for foliage insects and making measurements of leaf qualities (toughness, water content, etc.). By night, we analyzed data in our thatched-roofed lab hut, built on stilts to avoid contact with the army ants that swarmed upon occasion through camp.

The expedition not only provided us with unique scientific information, but it also promoted a collaborative effort among different biologists, thereby enhancing the value of our data. We also learned a great deal about the pygmies in the nearby village and frequently encountered their signs (trails, snares, fishing boats) outside the camp. As one of the few women on the expedition, I was privileged to be invited back to their village to see their children and their school, a stark contrast to North American classrooms.

The daily schedule was a routine of intensive field and laboratory work.



Meg Lowman rides on the "sled" to collect canopy foliage and insects in Cameroon, Africa.

The airship was inflated every morning at 5:00 am and launched for data-collecting. It returned to the launch pad by 9:00 am, unable to fly any later due to the prevailing winds over the canopy. Using ropes and climbing hardware, we ascended throughout the day into the raft that was anchored in the canopy, to conduct our research. The raft, situated at 45 m and resting atop the trees, was a very hot and humid working site but provided unique access into the upper canopy and the mid-canopy just below.

After 10 days of intensive work, we journeyed back to the U. S. having logged information on the herbivory of over 30 African canopy trees. We continue to classify the insects, several of which will be new species. I look forward to the next expedition which will be to Borneo for continued comparative studies of tropical tree canopies.

Meg Lowman, in her first year as the Research Director at Marie Selby Botanical Gardens, has spent over 15 years researching forest canopies in Australia, Africa and now Florida and Central America. The research department at Selby specializes in canopy biology and tropical plants, especially epiphytes.

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