The Bell Museum of Natural History

IMPRINT, the Bell Museum's quarterly magazine for members, offers stories of scientific adventure and discovery, insight into today's rapid environmental changes, updates on museum programs and exhibits, and fun activities for kids. IMPRINT is published quarterly and is available as a benefit of Bell Museum membership.

Pairing non-scientists with professional researchers, "citizen science" projects are making an impact around the globe. One program in Papua New Guinea helps local residents build a sustainable future.

Plants and People in Papua New Guinea
Story and photos by George Weiblen

This summer, Dr. George Weiblen joins the Bell Museum as curator of flowering plants and assistant professor in the University's Department of Plant Biology. Weiblen, who holds a Ph.D. from Harvard University, is an expert on figs and the wasps that pollinate them. For the past nine years, he has conducted research in the tropical forests of Papua New Guinea, a Pacific island nation north of Australia and east of Indonesia. In this issue of IMPRINT, he shares his remarkable connection with the people of Ohu village, where residents and scientists work together to preserve local heritage and habitat.

The tropical island of Papua New Guinea is about as far from the Minneapolis neighborhood that I call home as you can get. New Guinea's forests are one of the last great biological frontiers on earth, and their incredible diversity is what first attracted me to this far-away place. For instance, the island has at least twenty times more species of plants than are found in Minnesota. Nobody knows exactly how many because much of Papua New Guinea remains unexplored.

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Countless new species await discovery, if only biologists can locate them before it's too late. This tropical forest wilderness is slightly larger than the state of Texas, an area that continues to shrink under intense pressure from industrial logging and a growing local population.

I first went to Papua New Guinea in 1992 in an effort to catalogue the diversity of tropical trees, but I keep returning because of the people I met there. Over the years, my botanical research has developed into an ongoing exchange with local residents whose future critically depends on the fate of the forest.

Papua New Guinea doesn't have national parks protecting its biological riches. Instead, 98 percent of the country is owned according to tribal tradition, which means that environmental protection is the sole responsibility of landowners. This unique situation is a challenge for biologists confronted by a rising tide of species extinction in tropical forests worldwide. Tribal land ownership in Papua New Guinea means that a botanist can't so much as set foot in the forest without intruding on somebody's backyard.

Local involvement, respect, and education are essential

first steps toward protecting this vulnerable habitat. I learned these lessons as a graduate student when I traveled to Madang, Papua New Guinea in search of field sites for my Ph.D. thesis research. At that time, interested community leaders had invited a team of biologists to survey the forest around Ohu village, near Madang.

It was on a visit to Ohu that I met Mr. Brus Isua. A subsistence farmer with a sixth grade education and five children, Brus had never met a biologist before. As is customary with visitors, however, he accompanied me as I surveyed the fig trees of Ohu. It didn't take long for me to realize that Brus was a person with extraordinary curiosity and a sharp eye for natural history. We chatted in pidgin English, or "tok pisin," while walking his forest paths.
I talked about fig trees, pointing out how there are more species of figs in New Guinea than occur anywhere else on earth. I told him how very small wasps pollinate the figs, how each species of fig is pollinated by a unique species of wasp, and how they depend on each other for survival.

As we counted the species, Brus described their local uses and named them in Amelé, a traditional language with just a few thousand speakers in Madang. The leaves of some species are fine as stewed greens, he told me. Particular species are used to make bark cloth while others provide colorful dyes for grass skirts. Some fruits make a tasty snack when salted and others are sweet. Along the path, I spotted a familiar plant.

"Ficus pungens," I said.

"Epe-al," replied Brus.

To my amazement, Brus could match each scientific name with the Amelé name for that plant. I had found a field assistant.

Choosing to work with Brus was one of the best decisions I've ever made. Within the year we had documented more than 60 different species of figs in Madang alone, and we had collected countless insects from their fruits. Many of the fig wasps that Brus found were new to science, and we sent them to experts around the world.

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