

# Biological Diversity of the Newsletter Guiana Shield Program

june 2005 - issue 1



## *From the Director*

After 18 years as the Director of the *Biological Diversity of the Guiana Shield Program* (BDG) the urge to know what had happened to all those who had passed through our doors grew to alarming proportions. Eventually Carol Kelloff, Tom Hollowell and I decided to try to track down everyone who had gone to the countries of the Guiana Shield in some capacity for BDG or with BDG expeditions and anyone who had worked in our offices at the NMNH in Washington, D.C. What started out as a fun thing to do quickly became a huge task, one that Carol took most of the responsibility for bringing to completion. Some people were easy to find because we work with them regularly or see them at meetings; others are long gone but we know where they are, and still others are ‘missing in action’. We all spent time on the web (thanks Google) trying to track down former friends and colleagues. By the time we decided “enough” we had spent a year working on the project and found a large percentage of our friends. I have read these listings many times and I continue to be amazed by the wonderful and diverse group of people we have worked with over the years. My thanks to everyone, we miss you and hope you will continue to keep in touch. We will be doing another one of these next year so if you have additional information or if you want to add people or photos please send them along and we will store them for the next time.

I believe that together we have accomplished quite a bit over the last 18 years. However, I am not going to try to list everything. There is a brief General History of BDG at the end of the Newsletter and of course if you go to our website ([www.mnh.si.edu/biodiversity/bdg](http://www.mnh.si.edu/biodiversity/bdg)) you will find annual reports, publications, checklists, and much more.

We all hope to see you soon here at NMNH or somewhere in the far flung world of biodiversity science.

Vicki

## BDG Staff

**V. A. Funk** is a Curator of Compositae at the US National Herbarium, Senior Research Scientist in the Department of Botany, and Director of BDG. She continues to be responsible for the oversight and direction of the Program and the generation of new research projects. She deals with the few problems that cannot be handled by the Assistant Director and offers advice (sometimes when it is not needed). As director she is responsible for most interactions with other scientists, agencies, and organizations. She also continues to study the flowering plant family Compositae and is interested in systematics, biogeography, and biodiversity issues. In 2004 she was promoted to the rank of Senior Scientist, and she recently married her long-time companion, Jim Nix, in an informal ceremony in “Middle Earth,” New Zealand. A complete CV can be found on the BDG website.



Vicki and Jim near Queenstown, NZ.

**Carol L. Kelloff** graduated in 1986 from Elmira College with a B.A. in Biology, moved to Virginia, began her Master's degree at George Mason University and became a volunteer at the Department of Botany, Smithsonian Institution. The volunteer position eventually evolved into the Assistant Director to the Biological Diversity of the Guiana Shield (BDG) Program. For the BDG Program she handles all budgets, travel, procurements, personnel actions, plant processing and anything else that comes across her desk. Carol's travels have taken her to Surinam and French Guiana but the main BDG focus has been on Guyana. Her Ph.D. was completed through George Mason University by attending night classes where her research focused on the plants of Kaieteur National Park, Guyana and how plant data could be used by the government of Guyana as a tool for conservation and development of the park. She now travels to Guyana several times a year to assist the University of Guyana with curating their biodiversity collections. She sometimes asks “Is there life after Guyana?” That has yet to be determined, and as Carol reports, she has “...still not decided what she wants to do when she grows up.”



Carol in the Guyana National Herbarium, CSBD.

**Tom Hollowell** (BDG Data Manager) is responsible for the extensive plant database of the Biological Diversity of the Guiana Shield Program. He received his B.A. in Theater and Film long ago from Denison University. In 1992 he earned an M.S. in Environmental Science & Policy from George Mason University where he is currently a Ph.D. candidate working on fire-disturbed mangrove ecosystems in Guyana; he expects to graduate in 2005. Tom keeps botanical data records up to date for the BDG Program's 18 years of collections from Guyana, Surinam and French Guiana, and provides information to specialists working on plants of the Guiana Shield and all of the information and labels used by the Program's plant sorting staff. He is in the process of merging the *Checklist of the Plants of the Guianas* with the species from the *Flora of the Venezuelan Guayana*, as those volumes are published by Missouri Botanical Garden. He also oversees databasing of historical plant collections from the Guianas and the Venezuelan Guayana held in the US National Herbarium and for Geographic Information System analyses of biodiversity. He has just finished co-editing, with Robert P. Reynolds, the *Checklist of the Terrestrial Vertebrates of the Guiana Shield*, which is being published in 2005.



Tom's fire damaged mangrove study site at Shell Beach, Guyana.

## BDG Resident Collectors



John (from the Fairchild Tropical Garden website).

From 1986 to 1998 the BDG Program maintained full-time plant collectors in Guyana. These individuals organized collecting expeditions and assisted in the field work of visiting scientists. Each year approximately six major expeditions were organized and carried out. Some of our resident collectors moved on to other projects, but many continue their studies and interest in this unique area of South America.

**John J. Pipoly III** (Director of the Center for Tropical Plant Conservation, Fairchild Tropical Botanic Garden) was the Resident Collector from 1986 – 1987. He received his B.Sc. in Botany, Michigan State University and his M. Phil. and Ph.D. in Biology from the joint New York Botanical Garden-City University of New York program. John was the first resident collector to participate in what ultimately became the Biological Diversity of the Guiana Shield Program. When Pipoly was hired, the Program was a joint Smithsonian, New York Botanical Garden, and University of Guyana project. Through John's work in Guyana, the BDG Program was able to set up the infrastructure necessary for a successful plant diversity inventory program. After 13 months in Guyana, John held a post-doctoral position at NMNH. He then went to the Environmental Protection Agency, the Missouri Botanical Garden and the Botanical Research Institute of Texas. John is currently the Director of the Center for Tropical Plant Conservation and Acting Keeper of the Herbarium, Fairchild Tropical Botanic Garden Coral Gables, FL.



Bill Hahn (photo: GU website)

**William J. "Bill" Hahn** (Associate Dean, Georgetown University) was the Resident Collector from 1988 – 1989. He completed his Ph.D. at the University of Wisconsin after he returned from Guyana. He is currently the Associate Dean and an Associate Research Professor of Biology at Georgetown College, Georgetown University, Washington, D.C. His research focuses on plant molecular systematics, conservation genetics, and the evolution of the monocots (especially palms) as well as the systematics of evening primroses and diatoms.



Lynn on the Canje River, Guyana (photo by CLK).

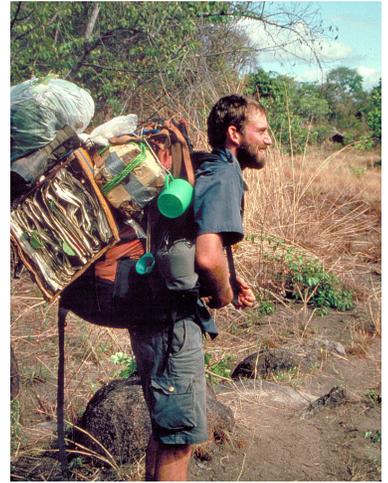
**Lynn J. Gillespie** (Adjunct Professor, Canadian Museum of Nature, Ottawa, Ontario, Canada) received her Bachelor of Science from Canada's Carleton University and her Master's and Ph.D. from the University of California at Davis. She was the Resident Collector from 1989 – 1990. She is now an Adjunct Professor at the Canadian Museum of Nature. Her current research interests are in molecular systematics of arctic flowering plants, including hybridization and introgression; taxonomy and phylogeny of the Euphorbiaceae (a primarily tropical flowering plant family, which includes many economically important plants including the rubber tree, cassava and poinsettia); and aquatic plant biodiversity and long term monitoring.



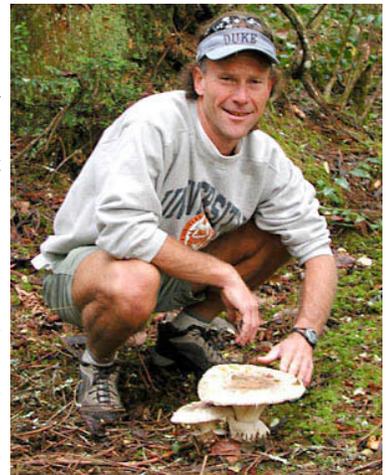
Tim McDowell (photo by S. McDowell)

**Tim McDowell** (Associate Professor, East Tennessee State University) was the Resident Collector from 1990 – 1991. He completed a Ph.D. in Botany at Duke University after his time in Guyana. His undergraduate degree, also in Botany, was from University of North Carolina, Chapel Hill. Since 1998 Tim has been on the Biology faculty of East Tennessee State University, where he is an Associate Professor and teaches botany courses such as plant diversity, systematics, and Appalachian Flora. He also directs the ETSU Arboretum, which produces brochures, a newsletter and articles on trees in the landscape. The Arboretum program has added hundreds of new tree varieties to the campus. His research is on the taxonomy and evolution of various groups (*Exostema*, *Morinda*) in the coffee-quinine family, Rubiaceae, which occur in the Caribbean and tropical Americas. Tim is currently investigating the relationships of the South American species of *Morinda*, a group of trees frequently used medicinally; ten species occur in Guyana. He participates in various conservation groups to protect the Southern Appalachian forests and natural areas. Tim's favorite pastimes include hiking, gardening, swimming and biking. He has a 20 year old son, Sequoia, who lives in nearby Asheville, North Carolina. In the coming years Tim hopes to continue with Rubiaceae research, develop the campus arboretum, and stay active in regional conservation groups.

**Bruce Hoffman** (PhD Graduate Student, University of Hawaii) was the Resident Collector from 1991 – 1993. He received his B.A. in Environmental Biology from Humboldt State University in California and spent his summers working on Alaska salmon fishing vessels. Bruce traveled extensively in South America after graduation and worked in Ecuador with a botanist from the New York Botanical Garden collecting for NIH and studying ethnobotany of the Schuar Indians. Bruce has also worked as a conservation biology specialist for international NGOs. He was a Smithsonian intern during the summer of 1989 and attended courses in forest ecology through the U.S. Forest Service as well as tropical ecology courses in Costa Rica before he began working as resident collector for BDG. After leaving Guyana, Bruce continued his education, receiving his Master's degree in Biology from Florida International University (1997), with a thesis on the ecology and harvest of *Heteropsis flexuosa* (Araceae), a hemi-epiphyte with aerial roots, harvested in Guyana for cane furniture production. He is now enrolled in a Ph.D. program at the University of Hawaii and expects to defend his dissertation in January 2006. Bruce's doctoral field research is in Surinam, South America, and is being executed in collaboration with the Amazon Conservation Team, a Virginia-based conservation NGO. The aim of the research is to compare the perception, folk classification, ecological knowledge, and resource uses of three vegetation zones and associated plants by two distinct traditional forest cultures. In addition, the most important cultural plants are being documented to assess the historical impacts of utilization on populations, including a population biology harvest impact study on an understory palm species used as thatch. After graduation Bruce would like to work full-time for conservation NGO or for a botanical research and education institution associated with a university, a botanical garden, or natural history museum. Bruce is presently engaged to a Surinamese Dutch citizen and graphic designer, Nancy Valies.



**Terry W. Henkel** (Assistant Professor, Humboldt State University) served as the Resident Collector from 1992 – 1994. He received a B.S. (Ohio University), M.S. (University of Wyoming), and a Ph.D. (Duke University, 2001) in Botany. Since January 2002 he has been an assistant professor at Humboldt State University in Arcata, California, teaching courses in mycology, forest pathology, and tropical biology. During his two years in Guyana he organized expeditions to the summits of Mt. Ayanganna (with Bruce Hoffman), Mt. Wokomung in the Pakaraima Mountains, and the Essequibo Headwaters in the Acarai Mountains. As well as collecting over 6000 angiosperm, fern, bryophyte and lichen specimens during his tenure, Terry discovered a number of mycological phenomena upon which he later based his Ph.D research. His current research involves the ecology of single-species forest dominance in the Pakaraima Mountains, Guyana, focusing on ectomycorrhizal associations in *Dicymbe* species (Caesalpinaceae). Terry and his colleagues are publishing many papers on the taxonomy and systematics of ectomycorrhizal basidiomycetes associated with *Dicymbe*, which include many new species and genera; he regularly travels to Guyana, sometimes with students in tow. Terry says that “After 15 years in Guyana’s back country, I am hooked for life!”



**Patrice Mutchnick** (Instructor, Western New Mexico University) was the Resident Collector from 1994 – 1995. She received her Bachelor of Science degree (1985) from the University of Maine at Orono in Parks and Recreation Management and her Master's (1994) from the Ohio University in Environmental Studies and Ethnobotany. She was the resident collector for BDG from October 1994 to June 1995. Patrice organized expeditions in the Ireng River area of the Pakaraima Mountains and in Iwokrama, central Guyana. She now lives in New Mexico and is an instructor at Western New Mexico University where she serves as the Biology Laboratory Coordinator. She was the Coordinator and Guide for the Appalachian Mountain Club, New Hampshire: 1997-2000.



Patrice Mutchnick (photo: WUNM website)

**H. David Clarke** (Associate Professor, University of North Carolina at Asheville) was the last Resident Collector serving from 1995 – 1997. David has returned to Guyana for collecting trips in 1998, 1999, 2001, 2003, and 2004. He also participated as plant collector with Conservation International's AquaRAP expedition to the Coppename River in Surinam in 2004. Most of his 20 expeditions took place in the pristine forests of the granitic mountains south of the 4<sup>th</sup> parallel or around the tepuis of the Pakaraima Mountains; so far his expeditions have yielded more than 12,000 collecting numbers. Nearly all of these expeditions entailed extensive line cutting by Romeo Williams and other Amerindians assistants. This line cutting work would start up rivers at the last spot navigable by dugout canoe, and allowed for collecting at the highest elevations in previously uncollected areas. Claudius Perry also assisted with collecting and tree climbing on most of these expeditions. David's counterparts from the University of Guyana have included Tsitsi McPherson, Calvin Bernard, Keith David, Chris Chin, Waldyke Prince, and Diana Gittens. Sally Adkins and



David Clarke in Guyana.

Susan Grose, interns from the BDG Program, also participated on expeditions in 1996 and 1997. On his four most recent expeditions, three to the summits of the tepuis Ayanganna, Wokomung, and Maringma and one to the Coppename River, UNCA students Erin Tripp, Josh Kelly, Stephen Stern, and Jaye Rhodes assisted in collecting. Most of David's funding has come from the BDG Program and the National Geographic Society. Extensive cooperation and assistance from Guyanese both in Georgetown and the interior has allowed David to carry out ambitious expeditions to unique, pristine habitats in Guyana that have yielded many new species, genera, and geographic records. A multiplying effect is sometimes achieved by sharing GPS waypoints, trip reports, contacts, and other information with zoological researchers that have recently cut transects for their own expeditions. David comments that "Despite all of my experience, contretemps and mishaps are still a hallmark of my expeditions and I now have a lifetime's worth of stories featuring snakes, floods, rock falls, malaria, and risky aircraft." When he is not thinking about the rainforest he may be seen double-digging garden beds at his house next to the woods on campus or off-trail "Rhodosurfing" in the Southern Appalachians in a vain attempt to stave off his impending declining years when Guyana expeditions must end. He now teaches botany at the University of North Carolina at Asheville, a small, undergraduate liberal arts university in the mountains of western North Carolina where he was recently granted tenure.



Brian O'Shea in Ecuador.

**Steve Fratello** (free lance collector and writer) received a B.S. in Science from the United States Air Force Academy. His passion is collecting butterflies and moths, and he has collected in Costa Rica, Guyana, Papua New Guinea, Sulawesi, Malaysia, Australia, Venezuela, and Peru. Steve's research interests are the field ecology, biogeography, and taxonomy of *Rhopalocera* (butterflies and skippers) worldwide. Steve was the Resident Collector (Entomology, Lepidoptera) in 2000-2001. He has published many popular articles on Guyana (see the BDG website).

**Brian O'Shea** (PhD Graduate Student, Louisiana State University) received his BA in Biology from Reed College in Portland Oregon. He is currently enrolled in the Louisiana State University graduate program where his thesis research concerns "Community dynamism and population connectivity of savanna birds on the Guiana Shield". Brian spent six months in Guyana in 2001 as the Resident collector specializing in birds. He returned in 2004 to collect data for his PhD and while he was there he participated in a joint expedition involving the Smithsonian's NMNH Division of Birds and the LSU Museum.

**John LaPolla** (SI Post-Doctoral Fellow, 2004 - 2006) received his B.S. from Stockton College in 1997 (Senior Thesis: Ants of the Pine Barrens) and his Ph.D. from Rutgers University in 2004 (Revision of the Ant Genus *Acropyga*; Hymenoptera, Formicidae) and the Evolution of Trophophoresy. John's main research interests center on ant systematics, taxonomy, biogeography, and biodiversity. He is particularly interested in the discovery of new taxa by completing monographic revisions of various groups. Additionally, he is interested in insect conservation and patterns of insect biodiversity. In Guyana, John was the Resident Collector (Entomology, Ants) in 2002 where he participated in studies of the leaf litter ant fauna (with Ted Schultz) with the hope it will inform conservation decisions and begin to allow us to make observations on the patterns of leaf litter ant diversity across the Guiana Shield, and eventually all of South America. Those interested in John's work can go to <http://www.guyanaantproject.org/>.

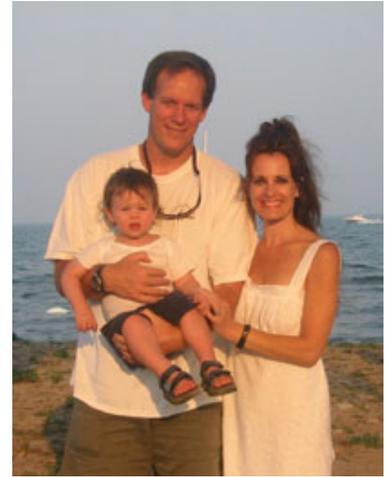


John LaPolla at the base of Mt. Ayanganna with Winkler leaf-litter extractors.

## Interim Managers

For a brief time the BDG had an Interim Manager in Guyana. This position was created in order to assist the University of Guyana with managing the newly opened Centre for the Study of Biological Diversity. In addition, it provided a Georgetown contact for visiting scientists to contact for assistance with the logistics of expeditions, as well as provided maintenance the for the BDG's vehicle and house in Georgetown.

**Shawn Lehman** (Assistant Professor, University of Toronto) was the first Interim Manager serving from 1994-1996. During that time he opened the Centre's new Geographic Information System lab, expanded the Centre's botanical and zoological collections, and played a key role in a number of conservation initiatives in Guyana. During this time period, he also conducted 1,725 kms of primate surveys for his Ph.D. fieldwork on the biogeography of Guyanese primates. Of the nine primate species in Guyana, he documented the fact that only three are widely distributed in the country. This geographic variation in primate diversity is remarkable given that some primates with limited distributions in Guyana are amongst the widest ranging of all South American mammals. He determined that the biogeography of each primate species was due to a complicated pattern of present-day (e.g., habitat diversity and the distribution of important food resources) and long-term factors (e.g., riverine barriers to dispersal). After completing his Ph.D. in 1999, he became an Assistant Professor in the Department of Anthropology at the University of Toronto. He is currently directing an NSERC funded study of how landscape processes such as forest loss, forest fragmentation, and edge effects influence lemur ecology in Madagascar. His future research will focus on how edge effects influence the quality of plant resources exploited by lemurs.

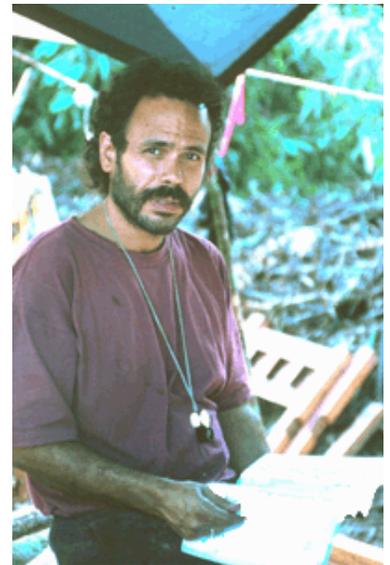


Shawn Lehman, with his wife, Christine and son, Joshua.

**James Singh** (Commissioner, Department of Forestry) graduated from the University of Guyana. He loved tramping all around the back country of Guyana. James served as Interim Manager for one year (1998-99) during which time he conducted tours of the Centre's collections for primary and secondary schools and coordinated the BDG's second Parataxonomy Course for Amerindians. He is now the Commissioner of the Department of Forestry of Guyana. Some time after James moved from the Centre to Forestry control of the Centre was transferred to UG.

## Collectors, Students and Collaborators

**Pedro Acevedo-Rdgz.** (Associate Curator, Botany, NMNH) is a curator in Botany at the U.S. National Herbarium. He received his BS from the University of Puerto Rico and his Ph.D. from the City University of New York. Pedro participated in BDG botanical expeditions to Guyana, Surinam and French Guiana in the early 1990's and recently returned to collect plants French Guiana. Pedro's research interests are the systematics of Sapindaceae and floristics and biodiversity of the West Indies, especially of Puerto Rico and the Virgin Islands. His phylogenetic studies concentrate on the Neotropical members of Sapindaceae, represented by approximately 700 species of lianas, shrubs, and trees, naturally occurring from southern United States to northern Argentina, including the West Indies. His research in the Caribbean has been devoted too much needed floristics and descriptive work. In spite of centuries of botanical exploration in the area, there is still no comprehensive floristic treatment that would assist in the development of broader scientific inquiry. In 1996, along with numerous collaborators, Pedro published the book *Flora of St. John, U.S. Virgin Islands*. In 2003, 2005, he published the book entitled *Vines and climbing plants of Puerto Rico and the Virgin Islands*. Pedro is currently working on the *Monocots and Gymnosperms of Puerto Rico and the Virgin Islands* with Mark T. Strong and hopes to have it published by the end of 2005.



Pedro in Peru.

**Ted Ahti** (Researcher, Emeritus – University of Helsinki – Lichens) studies the lichen family Cladoniaceae. In 1997 he joined Paula DePriest's (SI) expedition to Guyana. He has since retired from this position at the University of Helsinki but hopes to continue his research on Cladoniaceae.

**Sara Alexandra** (Peace Corps Volunteer – Madagascar) received her undergraduate degree from the College of William and Mary. She was an intern, 2003 and returned to BDG after her graduation to work for a while. She is currently a Peace Corps volunteer in Madagascar, working as a health educator. Sara reports that she is "enjoying the culture" and that she has "learned enough Malagasy



Sara just before she left for Madagascar.



John Boggan

to get by.” She has become a champion coffee roaster using her rickety but trusty gas stove and notes that “There are two types of coffee available here, plantation grown and what they call ‘child of town’ or homegrown. I got to taste the red fruit part of the bean for the first time and it tasted like red pepper. The home grown coffee is only occasionally available, but the taste is incredible, like fine quality dark chocolate.” Sara’s time with BDG may have contributed to her attachment to exotic coffees. She has one more year in Madagascar and has not yet made plans for what to pursue after her return.

**John Boggan** (Museum Specialist, Botany) has a B.S. in Entomology and M.S. in Systematic Botany, both from Cornell University. John’s first job after graduate school was as the BDG Data Manager (1991 – 1996). John’s primary project for the BDG Program was the compilation of the “Checklist of the Plants of the Guianas” (Boggan et al. 1992, first edition; 1997, second edition). From 1996 to the present he has worked as a research assistant at NMNH with Dr. Laurence E. Skog; among other projects he assisted with the treatment of the family Gesneriaceae for the Flora of the Guianas (Skog & Feuillet, in press). Since 2003 John has spent half of his time working under Ellen Farr as a member of the Botany Department’s Information Management Group, his primary duty being maintenance of the U.S. National Herbarium’s Type Register. John’s research interest is the systematics of the Gesneriaceae, and he has co-authored several papers with Larry Skog and Eric Roalson. John and his partner of 22 years, Dan Speck, have lived in Washington, DC since 1991.



Godfrey at CEIBA (photo by C. Kelloff).

**Godfrey Bourne** (Program Director, National Science Foundation; Associate Professor, University of Missouri – St. Louis) has had a long association with the BDG through his research and students. He received his B.A. in Zoology from Ohio Wesleyan University, 1971, his M.En. in Ecology from the Institute of Environmental Sciences, Miami University, 1976, and his Ph.D. in Behavioral Ecology from the School of Natural Resources and the Environment (SNRE)/Rackham School of Graduate Studies, U-M, 1983. Currently (August 2004 to August 2006) he is the Program Director of the Behavioral Systems Cluster at the National Science Foundation. Godfrey was born in Guyana and returns frequently for research and teaching. He is the Executive Director and Co-Founder of the CEIBA Biological Center, Inc., a nonprofit research, education and conservation field station near Georgetown, Guyana. His research involves linkages among several disciplines including behavior, ecology, evolution, genetics, and physiology to generate a better understanding of behavioral syndromes, including individual variation in behavior types (boldness, aggressiveness, activity level) and correlations across several contexts (mating, predator avoidance, foraging, dispersal). Current research activities are focused on the role of sexual selection in the evolution and maintenance of variation in fitness traits, primarily in frogs and live bearing fish. Secondary research interests deal with unraveling the nature of determinants of fish assemblages in small Neotropical streams, herpetological assemblages at Kaieteur National Park, Guyana, which are impacted by illegal gold and diamond placer mining, multi-species frog breeding assemblages, bat assemblages, and wetland bird assemblages. Most of these projects are conducted at CEIBA.



Debbie Brandan at NMNH (photo by T. Hollowell).

**Debbie Brandan** (Part-time BDG Contractor) Debbie helps with data entry, plant filing, and plant sorting for our exchange program (2004 – present). She also works part time for the museum’s Division of Birds. Debbie recently earned a B.A. in Biology from George Mason University and is contemplating her future.



Mike Braun in the field in Guyana (photo H. D. Clarke).

**Michael J. Braun** (Curator, Department of Vertebrate Zoology, NMNH) works in the Laboratory of Molecular Systematic (LMS) at the Smithsonian’s Museum Support Center. His interests include structure and maintenance of avian hybrid zones, the genetic structure and diversity of avian populations, and molecular phylogenetics. Mike has participated in several bird expeditions to Guyana to collect, survey and document the avian fauna of the Guiana Shield. Mike is also the lead author of the publication “A Field Checklist of the Birds of Guyana” and a participant in the project that re-discovered the Red Siskin.

**Eric Christenson** (Researcher – Orchids) has been one of the primary specialists identifying BDG orchid collections and reviewing orchid data for the Program’s checklists. He accompanied Carol Kelloff to Kaieter in 1994 at which time he made the rare discovery of *Vanilla bicolor* in flower. His loves are orchids, orchids, and more orchids. He has a bachelor’s degree in horticulture, a master’s degree in genetics, and a Ph.D. in orchid taxonomy. Eric is the Director of a laboratory specializing in clonal propagation of orchids in the genus *Phalaenopsis* and lives in Sarasota, Florida. He is particularly known for his journal articles which strive to bridge the gap between taxonomy and horticulture, and for his in-depth book reviews, not to mention his culinary skills. He is currently completing a monumental encyclopedia of orchid species for the American Orchid Society.



*Eric Christenson (photo: from his website)*

**Jonathan Coddington** (NMNH Departments of Entomology and Invertebrate Zoology) is the Curator of Spiders at NMNH and is currently serving as Chairman of IZ. He received his Ph.D. from Harvard in 1984 and is a leader in the field of phylogenetic systematics. He is conducting a survey of spiders across the Guiana Shield.



*Jonathon Coddington*

**Charles “Jay” Cole** (Emeritus Curator- Herpetology, American Museum of Natural History) received his Ph.D from the University of Arizona, 1969 (Karyotypes and Evolution of the Spinosus Group of Lizards in the Genus *Sceloporus*). Dr. Cole’s specialty is the evolutionary biology and genetics of reptiles and amphibians. He studies have included the biology of all-female species of lizards. **Carol Townsend**, his wife, is a research associate at AMNH. Carol and Jay are producing a preliminary survey of the amphibians and reptiles of Guyana, as part of a large, collaborative effort to understand the country’s biological resources and their potential in the contexts of development and conservation. This research involves scientists from several other institutions, including the Smithsonian Institution and the University of Guyana. Jay and Carol retired a few years ago and now live in Arizona.

**Jim Comiskey** (SI/MAB Program – plot studies) visited Guyana as part of the Smithsonian’s Man and the Biosphere Program (SI/MAB) team. He and his co-workers along with nine Guyanese students established a series of plots at the Aroaima Mining site in Guyana (see also Dallmeier).

**Richard S. Cowan†** (1921-1997), a systematic botanist specializing in Neotropical flora, received his Ph.D. from Columbia University (New York Botanical Garden) in 1952. As a former Director of NMNH and Senior Botanist at the National Museum of Natural History (NMNH), Cowan’s primary research interest was the systematics of legumes in tropical America. His collecting experience included expeditions to the Venezuelan Guayana in 1951, French Guiana and Surinam in 1954, and Guyana in 1955 and 1962. In 1983 Cowan helped start the “Flora of the Guianas” program when the Smithsonian founded a consortium with other northern institutions (B, NY, P, U, US) and their South American counterparts (BBS, BRG, CAY) to document the flora of the three Guianas in South America. In 1985 Cowan retired to Australia and the directorship of the Program passed to Dr. Larry Skog; Cowan died in November 1997.



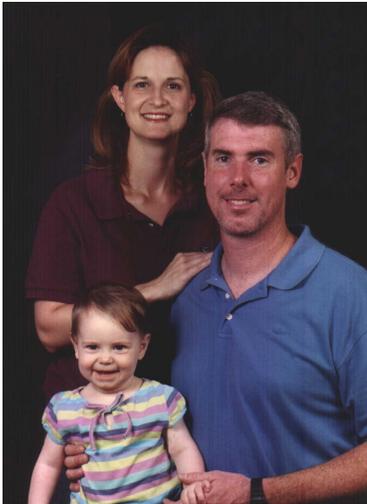
*Richard Cowan in the 1970’s (SI Archives)*

**Francisco Dallmeier** (Director, SI/MAB Biodiversity Program) has initiated and managed a number of national and international biodiversity surveys and impact assessments. As a Smithsonian scientist and educator since 1986, he has used his B.S. from the Central University of Venezuela and his M.S. and Ph.D. in wildlife ecology from Colorado State University in his work to link biodiversity conservation and development. He has coordinated over 60 international research and training programs in developing countries. Under his Directorship the Smithsonian’s Man and the Biosphere Program (SI/MAB) team went to Guyana in 1992 and, with nine Guyanese students, set up seven 1-ha plots at Kwakwani. With a growing sense of urgency over the destruction of natural habitats around the world, Dallmeier hopes SI/MAB will be able to “create more partnerships with industry to be able to create a biodiversity conservation model that works in many different scenarios.” He also sees MAB improving and expanding its education program in order “to increase the critical mass of people able to do the job” of biodiversity conservation.



*Francisco Dallmeier (photo from web)*

**Keitha Dattilo-Bain** (Conservation and Environmental Planner, Patrick AFB) worked with Vicki, Carol and the Guianas Program gang for quite some time on and off at the Smithsonian from 1993 to 1997. She moved to Florida and worked for the USDA in Fort Lauderdale under the Student Conservation Association umbrella for several months aiding with *Melaleuca* distribution and biocontrol studies. She left that job to attend graduate school at Florida Tech in Melbourne, FL and pursue an M.S. in Biological Oceanography. She completed her thesis in 1999, an investigation of relationships between the seagrass, *Thalassia testudinum*, epiphytic algae, and gastropod epiphytic-feeding grazers. After a break where she purchased a home and experienced the joys of home renovation, she found a job at Cape Canaveral performing data collection for numerous wetland/estuary studies focusing on the effects of opening up mosquito impoundments. While she worked for BDG, Keitha was dating Hugh Bain. They were married in 2000 and were able to spend 2 weeks in Ireland for their honeymoon. Unfortunately, in January 2003 Hugh's Army National Guard unit had a 15-month deployment to Jordan and Iraq for Operation Enduring Freedom. During that time Keitha had their first child, Kayla, in April 2003 and survived the hardship with the help and love of family and friends who flew down and to help with the baby. Hugh finally came home in March 2004 and Keitha reports that things are beginning to settle into place and they are "finally feeling like a real family." After her maternity leave Keitha switched jobs and she is now a civilian in the conservation and environmental planning office for the Air Force at Patrick AFB, Florida. Keitha went on her first business trip a few weeks ago to downrange sites in Antigua and the Ascension Islands where she had the opportunity to work with a botanist who is developing a mitigation plan for the Air Force for an endangered endemic spurge, *Euphorbia organoides*, that the Air Force may impact due to a road repairs.



Keitha, Hugh, and their daughter Kayla.

**Robert "Bob" DeFilippis†** (1939-2004) was a museum specialist in the Department of Botany, NMNH. He was born in Chicago and graduated from the University of Illinois. He received his master's and doctoral degrees in botany from Southern Illinois University. He was the lead author for *Medicinal Plants of the Guianas (Guyana, Surinam, French Guiana)* which was recently republished on the BDG website, and prepared the taxonomic treatments for several small plant families for the Flora of the Guianas project. Among his other publications was an *Ornamental Garden Plants of the Guianas* (1992). He died suddenly on 4 July 2004 of heart disease.



Paula DePriest in the field at Kaieteur National Park, Guyana.

**Paula DePriest** (Assistant Director, Smithsonian Center for Materials Research and Education (SCMRE) is a former curator in the Department of Botany, NMNH. During her time in Botany Paula took several field trips to Guyana to collect lichens with teams of Cryptogam specialists. Paula had been working in the office of the Assistant Secretary for Science for two years and in March of 2004 she officially left the Department for a new job, still within the Smithsonian but no longer a curator of lichens.

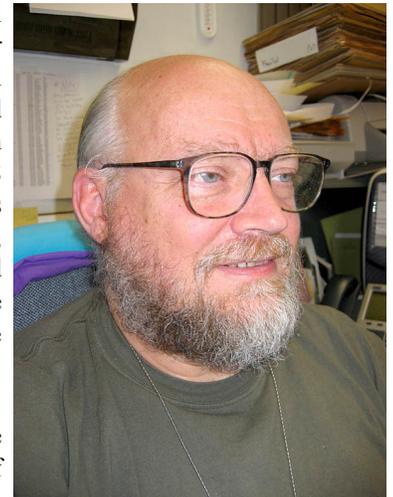
**John Dodge** (BDG Contractor) works part-time at MSC, matching plants with labels and sorting determined plants for distribution to the various herbaria that participate in the program. John, who describes himself as an apprentice field botanist, graduated from George Mason University (GMU) in 2000 with a Masters Degree in Biology. A two growing season floristic survey in part of Westmoreland County, Virginia, was the subject of his thesis. His studies at GMU were preceded by several plant courses taught by Marion Lobstein at Northern Virginia Community College (NVCC) and at the Blandy Farm outpost of the University of Virginia. John also completed the horticultural curriculum at NVCC under Larry Shapira and David Scheid; during this phase of study, John found that while all aspects of the plant world were interesting and challenging, field botany was the most interesting to him, so he enrolled in GMU under Ted Bradley. After graduation from GMU, John worked on two floristic surveys with Dr. Bradley, one over the 2002 growing-season at the NASA Goddard Space Flight Center campus in Greenbelt, MD, and the second over the 2003 and 2004 growing-seasons at the Prince William Forest Park near Quantico, VA. In a former career, John was an engineer working for Atlantic Research Corporation; his specialty was electromagnetic compatibility issues on planned and existing U. S. Navy ships. John says that he greatly appreciates his association with the botanists and plants of the Biological Diversity of the Guiana Shield Program, and the opportunity to learn about the Neotropical flora.

**Mark Engstrom** (Vice President for Collections and Research, Royal Ontario Museum) was born in Minnesota, received his B.S. in Biology from the University of Minnesota, his M.S. in Zoology from Fort Hays State University, and a Ph.D. in Wildlife and Fisheries Science from Texas A&M University. His specialization is in evolutionary biology and systematics of mammals. He has done field work in Central America studying evolutionary biology of Neotropical peromyscine rodents as well as in Guyana for the study of speciation and biogeography of mammals of the Pakaraima Mountains. Mark's current research is concerned with chromosomal speciation and evolution of reproductive isolation in arctic collared lemmings (*Dicrostonyx*) and systematics, biogeography and conservation of mammals of the Guiana Shield. In 1988 Mark moved to Canada to become an Assistant Curator at the Department of Mammalogy, Royal Ontario Museum where he currently holds the position of Vice President.



Mark Engstrom at Iwokrama.

**Christian Feuillet** (Research Associate, NMNH) studied in the Universities of Rouen, Montpellier, and Paris (France). He received his Bachelor's degree in Plant Biology (with a minor in Animal physiology) in 1978 and an M.S. in Plant Biology (Architecture in the Gesneriaceae) the same year from the University Pierre & Marie Curie (Paris); in 1981 he obtained a Doctorate in Tropical Botany (vegetative multiplication in the Gesneriaceae) from the same university. Christian worked for ORSTOM at the Paris Museum of Natural History (1981-1982) on the Flora of the Mascareign Islands project, and (1982-1988) at the ORSTOM Center in Cayenne, French Guiana. Since 1988 Christian has been a research collaborator and research associate at the Smithsonian Institution's Department of Botany. His research includes floristic treatments for the Flora of the Guianas project, focusing on Aristolochiaceae and Boraginaceae, the systematics of the Gesneriaceae (Guianas and Venezuelan Guayana) and Neotropical Passifloraceae. Christian married **Amy Rossman** (see below) in 1988, after they met on a BDG-sponsored field trip in French Guiana in 1986; they have a daughter, Denise who is now 16 years old.



Christian in his office.

**Oliver Flint** (Curator Emeritus, Entomology, NMNH) received his B.S. and M.S. from the University of Massachusetts and his Ph.D. from Cornell University. His studies the systematics of the Neotropical *Trichoptera* or caddisflies and the New World *Megaloptera* (alderflies, dobsonflies, fishflies) and *Odonata* (dragonflies and damsel flies). He made several collecting trips to Guyana.

**Patricia Gentili-Poole** (Museum Specialist, Entomology, NMNH) was born in Argentina and earned her B.S. and Ph.D. in Zoology at the Universidad Nacional de La Plata. Prior to moving to Washington, she was an Assistant Professor at the Universidad Nacional del Comahue, teaching the Arthropods course at the Centro Regional Universitario Bariloche. Her research interests concern the Systematics of Cossidae, Lepidoptera, and the biogeography and faunistics of Patagonia. Since 1997 she has worked as a Museum Specialist at the Smithsonian's Department of Entomology in the Lepidoptera collection. In collaboration with **Don Harvey**, her involvement with the Biological Diversity of the Guiana Shield Program includes the management of the Lepidoptera (moths and butterflies) from receiving of material to delivery of data and specimens to be returned to Guyana. Patricia has also been instrumental in the completion of several publications from BDG Program.



Patricia and Don in the Lepidoptera range.

**Susan Grose** (Ph.D. Candidate – University of Washington) has been associated with BDG since she was in High School. All through her academic career she has continued to return to the Smithsonian for some period of time each year. Since leaving (does anyone ever leave?) the Guianas Program she has completed an M.S. at the University of Hawai'i, researching the phylogeny of *Metrosideros* (Myrtaceae) with Cliff Morden. She is close to finishing her Ph.D. at the University of Washington under Richard Olmstead. For her Ph.D. research she has finally gotten to work on her favorite plant family, the Bignoniaceae. Her current research focuses on the genus *Tabebuia* and the tribe Crescentieae. Her research involves a phylogeny based on DNA sequence data with the goal of understanding fruit evolution in Crescentieae. She has found that some members of the Crescentieae are nested within *Tabebuia*, so it is a fantastic opportunity to look at the morphological shifts in the fruits that lead to mammal dispersal. Susan received a Dissertation Improvement Grant from NSF and spent the fall of 2004 in Zurich working on the morphological study of the gynoecia and fruit development in these two lineages. Susan reports that the data show that the shift to mammal dispersal has actually happened two additional times in the Bignoniaceae, so there's the potential for some interesting future research as well! Susan has recently become engaged to Arnaud Heydler. She is unsure about her future career plans, but notes that "there are compelling reasons to go to Southern California."



Susan Grose and her fiancé Arnaud Heydler in Strasburg.



Marilyn Hansel (photo: TH)

**Marilyn Hansel** (BDG Contractor) began working for the NMNH Department of Botany in 1987, first as a volunteer and then a contractor. She has worked on various projects for the Herbarium Support Unit, for Dr. Pedro Acevedo, Dr. Aaron Goldberg, and starting in 1995 for the Biological Diversity of the Guiana Shield Program. Marilyn says “It’s been an interesting place to work, and I always feel like I’m learning new things -- and you know, when you stop learning, it’s curtains.” Marilyn continues working as a contractor for the BDG Program where she still is databasing and barcoding the historical collections from the Guiana Shield region, filing plant specimens in the herbarium, and other plant related jobs.



Xavier Haro Carrión in Ecuador.

**Xavier Haro Carrión** (Student, Pontificia Universidad Católica del Ecuador) is from Quito, Ecuador. He is currently finishing his thesis and is considered a non-graduated senior at the Pontificia Universidad Católica del Ecuador. He is working on a thesis on the diversity of epiphytes in two different habitats on a gradient of proximity to the sea along the coast of Ecuador, but he has also performed studies in other fields. During the summer of 2003 he worked as volunteer databasing specimen information for the BDG Program under the supervision of Tom Hollowell and Vicki Funk. During the summer of 2004 he participated in the NMNH Research Training Program where he worked under the direction of Harold Robinson to produce a key for the species of *Critoniopsis* (Vernonieae) from Ecuador. In Ecuador he has volunteered and worked in the QCA herbarium. He participated in an Internship Course organized by the Missouri Botanical Garden and the Christensen Fund for Ecuadorian, Peruvian, and Bolivian undergraduate students. Xavier expects to finish his research project 2005 and obtain his Bachelor of Science degree, after which he plans on attending graduate school in plant systematics.

**Elizabeth Harris** see Quigley, Martin

**Sue Hodapp** was an early data manager for the BDG Program (1986-1992). She entered the information from the field notebooks and generated labels. She has moved on to other fields of interest but still lives in the DC area.



Irena Hollowell at the Fellowship Community.

**Irena Hollowell** (Volunteer) graduated from Williams College in 2002. After graduation Irena spent half a year working on a small almost-organic vegetable farm in Williamstown, MA, and then came back to the Washington, DC area for another nine months. From September 2003 until December 2004 she worked and lived in the Rudolf Steiner Fellowship Community of New York, outside of NYC. Like almost everyone who works there, she spent a lot of time doing farm and garden work during the summer and a lot of time year-round taking care of elderly residents and cleaning. She feels that she was lucky to be one of the main people in charge of the herbs, and also to work in the greenhouses and in the ceramic studio making pottery. She also sometimes took care of the horses, cows and sheep, cooked for the community, along with a wide variety of other community work. The Fellowship community is full of wonderful people aged two to 98, and she is considering going back there. In January 2005 Irena went to Ecuador for about a six month stay. She is planning on traveling some, volunteering for several organizations, working on sustainable agriculture, environmental projects, and general community-building. She hopes that in the future she will work for some of the same organizations where she has been a volunteer.

**Charles Horn** (Professor of Biology, Department Chair, Newberry College) received his B.S. from George Mason University in 1978; an M.S. from Ohio State University in 1980; and a Ph.D. from the University of Alabama in 1985. His master’s thesis and doctorate dissertation related to the genus *Heteranthera* (Pontederiaceae), the mud-plaintains. Charlie’s primary research interest continues to be with the systematics and ecology of the Pontederiaceae, a monocot family also known as the pickerel-weed family. Species of the family are widespread, especially in the new world tropics and subtropics. In addition, some species are known from Africa and Asia. Several species have been introduced as weeds into Europe and Australia, including one of the worst aquatic weeds, *Eichhornia crassipes* (water hyacinth). Charlie has made several collecting trips to Guyana.



Emmet Judziewicz

**Emmet Judziewicz** (Smithsonian Post-Doctoral Fellow 1987 – 1990; Poaceae) was born in Milwaukee, Wisconsin and received his Ph.D. in botany from UW-Madison in 1987 studying the taxonomy of tropical bamboos and primitive bamboo-like basal grasses. From 1987-1990 he did post-doctoral research on the grasses (Poaceae) of the Guianas at the Smithsonian Institution,

completing a book-length floristic treatment of the 400 species that occur in those countries. He has also worked for many years inventorying the Great Lakes region flora, concentrating on such archipelagoes as the Apostle Islands, Isle Royale, and the Grand Traverse Islands. Since 2001 he has taught plant taxonomy and agrostology at UW-Stevens Point. He is also currently working on a revision of the large Neotropical bamboo genus *Aulonemia* with Lynn Clark and Ximena Londoño.

**Lawrence “Larry” Kelly** (Director of Graduate Programs, New York Botanical Garden) was a participant in the 1989 and 1990 RTP programs working with V. Funk. He was an undergraduate at California State Polytechnic University, San Luis Obispo, where he studied with Dave Keil (B.S., 1991). He received his Ph.D. from Cornell University under the direction of Melissa Luckow (1998; thesis, “Systematic studies in Asarum and Aristolochiaceae”). After graduate school, he worked as an “Investigador Asociado” in the National Herbarium of Mexico at the Universidad Nacional Autónoma in Mexico City for five years before moving to New York. During both summers in the RTP Larry worked on writing descriptions and keys for Compositae from the Guianas. He now works on the systematics and taxonomy of *Symplocos*, *Saurauia* (Actinidiaceae), and Aristolochiaceae, and is the editor-in-chief of *Brittonia*.

**Helen Kennedy** (Research Associate) along with her long time companion, Fred Ganders, is at the University of British Columbia, Vancouver, Canada. She travels often, especially to Thailand, and narrowly missed being killed in the Tsunami of December 26, 2004, having been in the water when it struck the village of Phuket. Helen participated in field work in Guyana with Bruce Hoffman, Terry Henkel, and Carol Kelloff in 1992, and continues to identify many Marantaceae (Prayer Plant family) specimens for the BDG Program.

**Laura Kennedy** (free lance writer) graduated from Cornell University in 1981 with a degree in Environmental Science. After working for the American Association for the Advancement of Science and National Wildlife Federation, she joined the NMNH Office of Development and Public Affairs where she served as writer/editor from 1991 to 1996. During that time, she visited Guyana with Vicki Funk and wrote a cover story on the BDG for the NMNH publication “Quest.” After leaving NMNH she worked at AARP (formerly American Association of Retired Persons) through 2001, when she decided to return to her “roots” as an environmentalist. Laura and her husband moved to a two-acre property in rural Culpeper County (about 70 miles southwest of DC), and Laura is working as a freelance science writer and editor. Recent clients have included Science magazine, the Smithsonian Ocean Science Initiative, and the Association for Tropical Biology and Conservation. In her spare time she volunteers as Trail Manager for the local mountain biking club, with a focus on minimizing the impact of trails on wildlife and wetlands. She also devotes several days a month to helping abandoned dogs and cats find new homes through the Humane Society of Culpeper.

**Lars Peter Kvist** (Associate Professor, University of Aarhus, Denmark) lead a 1987 field trip to Guyana, collecting plants in the Kaieteur area with Ximena Londoño, Colin Steele and S. Tiwari. He has produced several treatments of genera in the Gesneriaceae (African violet family). He was a postdoctoral fellow with L. Skog from 1986-1987 and he is now an Associate Professor of Systematic Botany in Biological Sciences at the University of Aarhus, Denmark where he continues his research on Gesneriaceae and conservation biology.

**Burton Lim** (Assistant Curator in Mammals, Royal Ontario Museum) has been working at ROM since 1984 and completed his Ph.D. at the University of Toronto. He has been conducting fieldwork in Guyana since 1990. His research interests are in the biodiversity and systematics of mammals, particularly bats. Burton is a frequent collaborator with BDG, authoring papers and checklists on the Mammals of Guyana and the Guiana Shield with **Mark Engstrom**, also of ROM. More recently, he has expanded his studies from the Neotropics into Asia.

**Ximena Londoño** (Associate Researcher, Technical University of Pereira, and Faculty of Environmental Sciences, Pereira/Colombia) participated in fieldwork in Guyana with Lars Kvist and Collin Steele in 1987. She currently resides in Colombia where she is an Associate Researcher, Botany and Taxonomy, Technical University of Pereira, and Faculty of Environmental Sciences, Pereira/Colombia. She is President of the Colombian Bamboo Society and occasionally visits the Smithsonian.



Larry Kelly in Costa Rica 2003.



Burton with a view of the prow of Mount Roraima from the Guyana side. (Photo by F. X. Faigal © 2003 ROM).



Ximena Londoño (from the TUP website)



Jane Mac Knight

**Ross MacCulloch** (Royal Ontario Museum – Herpetology) is the Assistant Curator of Herpetology with the Centre For Biodiversity and Conservation Biology at ROM. He is a frequent collaborator with the BDG Program, contributing to checklists of the Reptiles and Amphibians of the Guianas and the Guiana Shield. He has made several trips to Guyana, including Mt. Ayanganna, that has yielded several Amphibian species new to science.

**Wayne Mathis** (Curator, Department of Entomology, NMNH) was a long-time member of the steering committee for the BDG Program. He made several field trips to Guyana and has published a number of papers on species of Diptera, including many from the Guianas.

**Jane MacKnight** (Registrar, Cincinnati Museum Center) received her BA in biology and a MA in museum studies from George Washington University. Jane was the Program Officer for the Guianas and for Plant Conservation at World Wildlife Fund – US and it was through her office that money was donated by the Royal Bank of Canada to construct the building that now houses the Centre for the Study of Biological Diversity in Guyana (CSBD; see below). In 1992 Jane returned to college for her Master’s degree and spent the summer of 1994 at CSBD assisting the University of Guyana with accessioning the incoming collections and filling in as Interim Manager. Jane enjoyed working with museum collections and took a job as the Registrar and Collections Manager at the Idaho Museum of Natural History. She now holds the position as Registrar at the Cincinnati Museum Center.



Chris Milensky

**Christopher Milensky** (Museum Specialist, Division of Birds, NMNH) began his career in ornithology at the age of 13 by volunteering at a bird banding station in central Ohio. He went on to receive a B.S. in Wildlife Science from New Mexico State University where he worked as a specimen preparator and assistant curator in the natural history museum. After graduation, Chris worked as a curatorial assistant in Ornithology at the Museum of Southwestern Biology in Albuquerque before coming to the Smithsonian in 1995. Chris is part of the collections management staff where he spends much of his time collecting and preparing specimens, cataloging, and keeping the collections up to date and organized. Chris first ventured to Guyana in 1996 and has returned about nine times since, concentrating on surveys in remote parts of the country that have added numerous new species for the country’s list and greatly enhanced the Smithsonian collections from the region. Chris recently co-authored the chapter on Birds for the *Checklist of the Terrestrial Vertebrates of the Guiana Shield* with Wiltshire Hinds (Guyana) and Alexandre Aleixo (Brazil).



Jeremy and a red kneed spider (from the George Washington University website).

**Jeremy Miller** (Postdoctoral Fellow, Department of Entomology, NMNH) received a B.S. from The Evergreen State College in Washington, an M.S. from Western Carolina University, North Carolina, and his Ph.D. from the George Washington University. Jeremy’s areas of interest include phylogenetics, descriptive taxonomy, online taxonomic tools, biodiversity, biogeography, and international fieldwork. He is also interested in streblid and nycteribiid ectoparasites of bats. Until recently, Jeremy was postdoctoral fellow at Smithsonian’s National Museum of Natural History, working on the molecular phylogeny and taxonomy of widow spiders (Araneae, Theridiidae, *Latrodectus*). Jeremy participated in the 1999 spider expedition to Gunn’s Landing in far southern Guyana. He is packing and off to California where he has taken a position at the California Academy of Science.



Scott and Carol Mori

**Scott Mori** (Nathaniel Lord Britton Curator of Botany, New York Botanical Garden) participated in a 1997 BDG expedition to Iwokrama Forest in central Guyana working with H. David Clarke. He is a preeminent specialist in the Brazil nut family, Lecythidaceae, and is interested in co-evolution between plants and their pollinators and seed dispersers. Scott has spent many years collecting plants in Saul, French Guiana and organizing the resulting data; he is the lead author of the recently completed two-volume *Guide to the Vascular Plants of Central French Guiana*. Scott travels frequently to the Neotropics, often with his wife Carol Gracie.

**Angela Newton** (Curator of Cryptogamic Botany, the Natural History Museum, London) spent several years as a Postdoctoral Fellow and Research Associate at NMNH Botany working on the bryophyte collections from the BDG Program. Angie participated in Cryptogam expeditions to Guyana in 1996 and 1997, collecting mosses.

**Paul Peterson** (Curator, Department of Botany, NMNH) is a curator in the Department of Botany, Smithsonian Institution. He received his B.A. Botany, 1977, Humboldt State University, his M.S. Biology, 1984, University of Nevada and the Ph.D. Botany, 1988, Washington State University. Paul's most interested in species and generic relationships, and biogeographical patterns in the grasses (Poaceae). His specialty is biosystematic studies of the grasses using a multitude of techniques ranging from in depth morphological, anatomical, cytological, micromorphological, molecular, cladistic, and population based genetic studies using soluble enzymes. Paul has completed revisionary studies in large grass genera, such as: *Eragrostis*, *Muhlenbergia*, and *Sporobolus*, all important forage grasses. He serves as editor of Botany's periodical, *Contributions from the United States National Herbarium*.



*Paul Peterson in the Andes.*

**Javier Piedra** (Senior Advisor, Access to Credit Initiative) worked with BDG for several years in the early 1990's. He was a specialist in helping raise funds in creative ways. He was responsible for the original grant from the Royal Bank of Canada that built the Centre for the Study of Biological Diversity in Guyana and for the USAID grants that paid for it to operate for many years. We still miss his fund raising skills and his humor. Javier is currently working for the Pragma Corporation in Kiev, Ukraine, and Almaty, Kazakhstan. His title is Senior Advisor on a project called "Access to Credit Initiative", which is funded by USAID.

**Martin Quigley** (Director of the UCF Arboretum) and his wife **Elizabeth Harris** (Director of the Herbarium UCF) did a plot study in Guyana in 1991. Martin then finished his dissertation at the end of 1993; it won the LSU Distinguished Dissertation award for 1994. Elizabeth was a postdoc in the Department of Botany 1991-1993. Martin joined Elizabeth in early 1994 at Eastern Illinois University where she had taken a faculty position in Botany after leaving the Smithsonian. Their sons Ed (1994) and Hugh (1997) were born there. Martin did consulting, taught at EIU, and originated a course for OTS in Conservation Biology in Costa Rica in 1995 and '96. In 1998 the family moved to Columbus where Martin got a faculty position in OSU's Horticulture Department and Elizabeth (eventually) became Curator of Cryptogams in the OSU Herbarium and taught in the Department of Evolution, Ecology and Organismal Biology. Their daughter Fiona was born in Columbus in 1998. Martin and Elizabeth have done some traveling (Europe, Central America, US) as well as research and publishing. They moved to the University of Central Florida in Orlando during the summer of 2004, just in time for the hurricanes. Martin is the Director of the UCF Arboretum, with a faculty appointment in Biology; Elizabeth is the Director of the Herbarium and teaches Biology. She is also spending studio time on some large fabric pieces and has had a show in Jacksonville, with another one in the planning. Martin reports that the family is "healthy and productive and doing well" in Orlando.



*Javier Piedra in Kazakhstan (photo: compliments of J. Piedra).*

**Ashish Rastogi** (Dentist) volunteered as a high school student (1992) and continued to be associated with BDG throughout his undergraduate studies at the University of Virginia. He received his DDS degree, also from UVA, and is now practicing in Bowie, MD.

**Karen Redden** (Graduate student, GWU) has worked with the BDG Program for the past 5 years. She received her B.S and M.S. in biology at George Mason University and is now a Ph.D. candidate at George Washington University. The focus of her doctoral research is the phylogeny of a group of Caesalpinoid legumes endemic to the Guiana Shield area. Using molecular and morphological characters Karen is looking at floral and leaf evolution in this closely related group of plants. Upon graduation next year Karen plans to continue her research in legume systematics, although what form that may take is not yet known. However, because of her love of field work, plant collecting will be an integral part of her future plans. Expeditions planned for 2006 include Borneo, Malaysia and Thailand, as well as localities in South America. Karen started with the Program as a contractor hired to identify, sort and distribute specimens at the Museum Support Center. She then went to Guyana to help update and organize the Program's herbarium at the University of Guyana. After entering graduate school, Karen has continued her connections with the BDG Program and continues to identify plant specimens and update the floral treatments of the area. She has headed major expeditions in Guyana and Venezuela supported by the BDG Program as well as George Washington University and the National Science Foundation.



*Karen in Guyana with Romeo Williams (L) and Claudius Perry.*



*Karen Richardson, her husband Roussos Dimitrakopoulos and their children, Alexander and Sophia (Australia, 2005).*



*Jaye in the Adampada Creek, Surinam (photo by J. Rhodes).*



*Mark Robbins (left) in Guyana with Claudius Perry, James (Wai-Wai), and H. David Clarke.*



*Haldre Rogers*



*Amy Rossman with her daughter Denise Feuillet.*

**Karen Richardson** (Research Associate, McGill University) has worked with BDG for over 12 years. In the early 1990's she was a consultant for the World Bank GEF and part of her assignment involved helping set up a National Protected Area System for Guyana. Ten years ago she moved to Australia and she continued to help us analyze data and understand all of the new biodiversity "stuff" that was coming out. She has just returned to Montreal and will take up her new job as a Research Associate Professor in a couple of months. Before leaving for Australia she married Roussos Dimitrakopoulos and they have two children, Alexander (6 years) and Sophia (nearly 2).

**Jaye Rhodes** (Undergraduate, University of North Carolina at Asheville) is a senior at the University of North Carolina, Asheville. In February and March of 2004 she accompanied H. David Clarke on a river-based botanical collecting expedition to Surinam, in collaboration with Conservation International. BDG is coordinating the plant sorting, identification and distribution for the expedition. Jaye has come to the US herbarium with crews from UNC Asheville several times from 2003-2005 to help with determination of plants from Guyana and Surinam. She attended the Smithsonian Botanical Symposium "The Future of Floras: New Frameworks, New Technologies, New Uses" on 15-16 April 2005. After graduating from UNC Asheville in May 2005 she will be starting a five month internship, through the Chicago Botanic Garden, at the BLM Tillamook Field Office in Oregon, where she will perform botanical surveys including plenty of plant collecting and identification.

**Mark Robbins** (Collections Manager-Birds, Museum of Natural History, University of Kansas) has been to Guyana many times collecting birds. He is a well known research scientist specializing in neo-tropical birds.

**Haldre Rogers** (graduate student, University of California-Davis) graduated in 2000 from Colgate University, majoring in biology. She worked for BDG as contractor in 1997. She has just finished a job as the USGS Brown Tree snake Rapid Response Team Coordinator on Guam and is headed to Graduate School in the fall of 2005 at the University of California, Davis. Right now she is in the Galapagos Islands helping a researcher with field work. Check out her website to see what she has been doing: <http://haldre.blogspot.com/>.

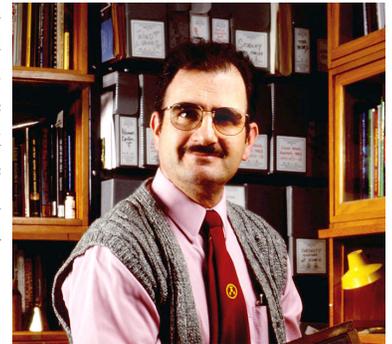
**Amy Rossman** (Director, U.S. National Fungus Collections BPI, USDA Agricultural Research Service) is the Research Leader of the Systematic Botany & Mycology Laboratory (SBML) including BPI. She received a B.A. in Biology from Grinnell College, Grinnell, Iowa, and a Ph.D. in Mycology at Oregon State University, Corvallis. As part of a postdoctoral fellowship at Cornell University and the New York Botanical Garden (1979-1980) she collected fungi extensively in the Neotropics with emphasis on ascomycetes. Amy participated in a BDG-sponsored French Guiana expedition in 1986, where she met her husband **Christian Feuillet**. She now conducts research on two major orders of pyrenomycetes, the Hypocreales and the Diaporthales including their asexual states, as well as other plant-associated microfungi. Working with David Farr, she manages the databases associated with the U.S. National Fungus Collections including data associated with the one-million fungal specimens. In addition, a database of all fungi reported on plant hosts is maintained that currently exceeds 500,000 records as well as nomenclature for these fungi. All data are available through the SBML Home page (<http://nt.ars-grin.gov>). Interactive keys for selected genera of rust fungi and ascomycetes are also available. All fungi from the BDG either are or will be deposited at Beltsville since lichens are the only mycology collections held at the US National Herbarium.

**Abelardo Sandoval** (Museum Specialist, NMNH) accompanied Kellogg into the field in 1995 and in 1998 and assisted her with setting up two plot studies at Kaieteur National Park, Guyana. He currently works in Anthropology, NMNH.



*Abelardo at NMNH. (Photo: M. Simik).*

**David Shayt** (Associate Curator, Division of Work and Industry, National Museum of American History) has been with the Smithsonian Institution since 1977. He has worked in the fields of mechanical and civil engineering history, and has developed new collections in the field of popular culture, including children's and worker's metal lunch boxes, toy production, and ice cream manufacture. His published works include studies of musical cymbals, ivory-carving traditions, and the public clocks and bells of Guyana and Sri Lanka. The public clocks and bells of Guyana's cities have been of particular interest in David's engineering history studies. In collaboration with the BDG Program and his colleague W. David Todd (also AMNH) he has restored the large public clock in Georgetown Guyana's Starbroek Market, the sundial from the Botanical Garden, the clock at the Law Courts and others. He earned a B.A. from Humboldt State University in 1977 and an M.A. from the George Washington University in 1983. He became familiar with Guyana when he served as a Marine Guard at the U.S. Embassy in Guyana (June 1973 to August 1974).



*David Shayt at the AMNH, Smithsonian.*

**Brian Schmidt** (Museum Specialist, Division of Birds, NMNH) earned a B.S. in Mathematics and Biology at the University of Puget Sound in Tacoma Washington, graduating with honors in Biology. Currently Brian works in the Smithsonian's Division of Birds. His main priorities are to enhance NMNH bird collections through the acquisition of new specimens, improve the collections database, assist researchers with their studies, and to work with other countries to help document their avian diversity through surveys and collections. He has participated in several Division of Birds expeditions to Guyana. Brian is also a co-author of the publication "*A Field Checklist of the Birds of Guyana.*"



*Brian Schmidt with the expedition's host in the Wai-Wai's village of Gunn's (Photo: H.D. Clarke)*

**Ted Schultz** (Chair, Department of Entomology, NMNH) received his B.A. in Biology, Evolution and Systematics from the University of California at Berkeley in 1988 and his Ph.D. in Entomology from Cornell University in 1995. He has been a research Entomologist at the Smithsonian Institution since July 1995. His research concentrations have been in the evolution and systematics of ants, especially the fungus-growing ants (Myrmicinae: *Attini*), phylogenetic analysis using morphological and molecular characters, historical ecology and evolution of the fungus-growing behavior, theory and methodology of phylogenetic analysis, especially the reconstruction of ancestral character states and quantitative methods for collecting ants for monitoring biodiversity. He has collected ants in Guyana with John LaPolla at Pirara, Karanambo, Iwokrama, Annai, Paramakatoi, the north coast near Georgetown, Mt. Ayanganna, Lethem, Moco Moco, Nappi, Kwatata, and Karanambo. Their goal is to produce, over the next few years, a good sampling of the "Ants of the Guiana Shield." They are currently on an expedition in French Guiana for sampling of leaf litter ants to compare with the collections from Guyana.



*Ted at base of Mt. Ayanganna with Winkler leaf-litter extractors.*

**Matt Sewell** (BDG Contractor) graduated from Penn State in 1997 and began working for the BDG Program that Fall. He traveled to Guyana in the Spring of 2000 where he helped organized the herbarium in the Centre for the Study of Biological Diversity (UG) and he accompanied Tom Hollowell on a mangrove research trip to Shell Beach. In the fall of 2000 he entered graduate school at Miami University, Oxford, Ohio. He received his M.S. in 2003 with a biosystematic study of a species complex in *Phacelia* under Dr. Mike Vincent. In April, 2003 he rejoined the BDG Program so he would have some time to look around for the perfect job. In addition to sorting and identifying BDG's backlog specimens, Matt has been working with Vicki on a Compositae molecular phylogeny project.



*Matt examining the first record of *Acioa guianensis* (Chrysobalanaceae) for Surinam (photo: TH).*



Larry Skog in French Guiana.

**Mary Skinner** (Part-time Contractor, BDG) began mounting plants for the Department of Botany in the late 1960's. Since her retirement from Botany in 1987 Mary has continued to mount plants for the Biological Diversity of the Guiana Shield Program from her Roanoke, Virginia home. Mary has been mounting plants for over 40 years and one can only imagine how many sheets have been filed in the US National Herbarium that were prepared by her.

**Laurence E. Skog** (Curator Emeritus, Department of Botany, NMNH) is a specialist in the systematics of neotropical Gesneriaceae; he has also worked on the Gesneriaceae for the Flora of China. He took over as Director the BDG Program from Richard Cowan in 1985, and continued in that role until 1987 when he became NMNH Botany Department chair, at which time he turned the directorship of the BDG over to Vicki Funk. From 1983 on, Larry has been the US National Herbarium representative to the Flora of the Guianas Advisory Board. He has participated in field trips to French Guiana and Surinam.



Paul Spangler

**Paul Spangler** (Retired, Department of Entomology, NMNH) received his B.A. in Zoology from Lebanon Valley College in 1949, his M.S. from Ohio State and a PhD from the University of Missouri in 1960. Soon after graduation he began working for the Smithsonian (1962). Paul's research interest was in the study of worldwide aquatic and semi-aquatic beetles with a special interest in the New World tropics. In 1996 he collected aquatic beetles (Coleoptera) in Guyana. Paul retired from the Smithsonian in 2000 and now lives in Missouri.

**Joseph Spatafora** (Associate Professor, Oregon State University) received his Ph.D. from Louisiana State University in 1992. His research interest is in mycology and the systematics, evolutionary biology, and population genetics of fungi, with emphasis on the evolutionary biology of fungal symbioses as related to evolution of host shifts, the phylogenetic integration of ecologically disparate groups of fungi, and population genetics of closely related organisms with different reproductive traits. Joey collected fungi in Guyana in collaboration with the BDG in 1996 and 1997. Joey is currently an Associate Professor and Curator of Fungi at Oregon State University.



Joey Spatafora (photo: OSU website)

**Loretta Sprissler**† (1961 - 2004) worked for the World Bank GEF and along with others was working to help Guyana set up a system of protected areas. She was killed 6 December 2004 on the airport road in Guyana. At the time of her death she was the World Bank's team leader on negotiations for the Guyana Protected Area Systems (GPAS) and was in Guyana to finalize the agreement. Loretta was dedicated to helping developing countries protect their environments; she was 43 years old.

**Orlo Colin Steele** (Ph.D. graduate student, University of Hawaii) was an Intern in the Department of Botany in 1987 working with Bob DeFilipps. He participated in an expedition to Guyana organized by Lars Kvist in 1987. After leaving the Smithsonian Colin went to Ecuador for two years as a Peace Corps Volunteer. He is now in graduate school studying mangroves at the University of Hawaii and is a forest researcher under the American Samoa Community College Land Grant Program.

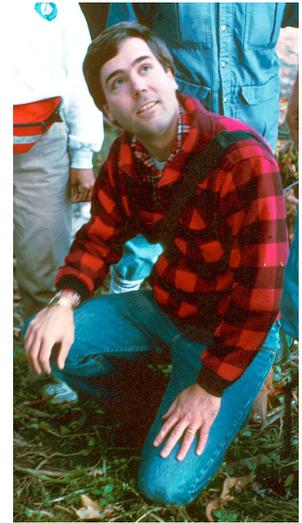


O.C. Steele in Hawaii.

**Stephen Stern** (Graduate student, University of Utah) graduated from the University of North Carolina at Asheville in December 2004. He joined David Clarke on the 2003 Mt. Ayanganna and the 2004 Mt. Marigma expeditions in Guyana. Stephen says that his "specialty was helping to sink boats" as the dugout they were in capsized in the rapids; although they thought all was lost in the river they were able to salvage all but the pole cutters. Stephen will be starting graduate school this Fall (2005) at the University of Utah working with Dr. Lynn Bohs on *Solanum* (Solanaceae). For a photo of Stephen see **Erin Tripp** (below).

**Mark T. Strong** (Museum Specialist, Department of Botany, NMNH) received his Ph.D. degree from George Mason University (GMU), Fairfax, Virginia. Mark, a botanist and naturalist, is currently employed as a Museum Specialist in the Department of Botany at Smithsonian Institution. As part of his position, he curates and catalogs the Cyperaceae (sedge) collection. He is a specialist in New World, Asian, and Polynesian sedges and the floristics of the southeastern United States and West Indies. In addition to coordinating the sedge treatment for *Flora of the Guianas*, Mark is currently collaborating on taxonomic treatments of *Bulbostylis* and *Rhynchospora* section

*Paniculatae* in the New World; preparing sedge treatments for the Marquesas Islands (Polynesia), and in part for the Flora of China; co-editing a full systematic treatment of monocots for Puerto Rico and the Virgin Islands; and producing a classification and characterization of *Magnolia* seepage bog communities that occur only in the Mid-Atlantic region of the U.S. Mark plans to continue work on the taxonomy and systematics of Cyperaceae and for the long-term he is interested in producing a worldwide phylogenetic classification of *Bulbostylis* and *Rhynchospora*. On a personal note, Mark met Carol Kelloff at GMU in 1987, and they were married in 1990. Their daughter Jennifer was born in 1996. Among other things, Mark enjoys time with his daughter, illustrating sedges, and riding his antique motorcycle.



Mark at Brent Marsh, on the Potomac, in 1994.

**Alice Tangerini** (Illustrator, Department of Botany, NMNH) is the staff illustrator for the Department of Botany at the National Museum of Natural History. Her main job is to provide scientifically accurate illustrations of plants for curators in the department. These illustrations are done primarily in a black and white medium such as pen and ink or pencil from herbarium specimens and the artwork is reproduced in botanical journals or books for the purpose of illustrating new species of plants, illustrating plants for a flora of a particular region, or illustrating a monographic revision of a particular group of related plants. Scientific Illustration requires great skill in dissecting plant parts under a microscope. Recently, Alice has developed her knowledge of computer graphics to expedite the drawing and reproduction process and allow for the highest quality printing. Alice is additionally responsible for managing the inventory and database of the Botanical Art Collection in the Botany Department. Alice also makes illustrations of living plant material in the field or at the research greenhouses. She made her first field trip in 1992, traveling in to Guyana to observe, sketch and photograph plants from Kaieteur National Park for Carol Kelloff's checklist. She also spent three days at the Arawak plantation making additional sketches, some in color pencil, of gingers and flowers of the cannonball tree. Two days before leaving Guyana, Alice met the newly elected Prime Minister, Samuel Hinds, and presented him with a watercolor of *Heliconia bihai* that she had painted for the occasion.



Charlotte Taylor (photo from MO website)

**Charlotte Taylor** (Curator, Missouri Botanical Garden) received her B.S. at the University of Michigan and her M.S. and Ph.D. at Duke University. She is a curator at MO and also an Adjunct Professor at the University of Missouri-St. Louis. Her research focuses on floristics of neotropical plant family Rubiaceae and on the systematics of several neotropical Rubiaceae groups including the tribe Coussareae (*Coussarea* and *Faramea*), and *Palicourea*, and neotropical *Psychotria*. Charlotte collected Rubiaceae in Guyana in 1997 and has identified many of the Rubiaceae collected by various BDG expeditions.

**W. David Todd** (Associate Curator, Emeritus, Div. of the History of Technology, AMNH) is interested in clocks, mainly American, British, and early German. His research specialties are clock making, restoration and conservation; archaic clock making techniques and tools; renaissance automata; and sundials. In 1990 the Smithsonian National Museum of American History, in collaboration with the City Council of Georgetown, undertook the project of studying, cleaning and returning to active duty the public clocks of Guyana. David Todd and **David Shayt** made several trips to Guyana and restored not only the clocks and bells, but also the lighthouse that turned the lens with a clock type mechanism and they provided recommendations on the structural welfare of Stabroek Market. They also repaired and cleaned a tropical sundial from the Botanical Garden in Georgetown, Guyana. David retired this year and moved to Kilmarnock, Virginia where he and his wife plan to set up a small clock shop.



Katarina with her "new" car.

**Katarina Topalov** (Graduate Student, University of Kansas) was a RTP Intern in 2001 working with Tom Hollowell and Vicki Funk on the biodiversity of the Puerto Ayacucho area of Venezuelan state of Amazonas. She is now a graduate student in the Department of Ecology and Evolutionary Biology at the University of Kansas, and rooming with fellow RTP intern Yana Reid. Her Master's thesis is on the phylogeny of *Sempervivum* (Crassulaceae). She is also a curatorial assistant working at the McGregor herbarium. Katarina is hoping to attend the International Botanical Congress in Vienna in July of 2005.



*Erin Tripp and Steven Stern at the base of the Ataro Falls, Mt Maringma, Guyana.*

**Erin Tripp** (Graduate Student, Duke University) began working with the BDG Program in the summer of 2001. Under the guidance of H. David Clarke she has participated in three plant collecting expeditions in the tepui highlands of western Guyana. The expedition summited Mount Ayanganna in 2001 (2,041m, Upper Potaro Watershed, 1,022 collections), Mount Wokomung, Little Ayanganna, and three unnamed pinnacles in 2003 (1,660m, Upper Potaro Watershed, 1,118 collections), and Mount Maringma in 2004 (2,180m, Upper Mazaruni Watershed, 1,083 collections). She occasionally visits the US Herbarium where she does determinations of BDG collections from “orphan” families. Currently she is a second year graduate student at Duke University, where she is using phylogenetic methods to study systematics, diversification patterns and floral evolution in the pantropical genus *Ruellia* (Acanthaceae). Erin plans to be finished with her PhD in 3-4 years and maybe even come back to work with BDG or a similar biodiversity-inventory/floristics-oriented institution. Erin says “Move over Tom Hollowell, and three cheers for tropical botany!”



*Don Wilson*

**Don Wilson** (Curator, Division of Mammals, NMNH) has degrees from the University of Arizona and the University of New Mexico. He collected mammals in Guyana early in the program, and he once spent nine days sitting on the dirt runway at Kato waiting for a “scheduled” charter plane. Don works on the “Mammals of the World” project and is particularly interested in bats. His future goals involve grandkids and golf, and riding the coat-tails of hard-working students.

## Our Colleagues from Guyana

The BDG Program has worked under the auspices of the University of Guyana (UG) since 1985. Our mission has been to document, study, and preserve the biodiversity of the Guiana Shield and to assist UG with building their biodiversity collection. It is through this relationship that we have worked with many Guyanese students, UG staff, Amerindians, and government officials. Along with our research we have provided opportunities for young Guyanese to explore their potential and to embark into the world of biological science. They have joined our expeditions, working along side us in sometimes very harsh, wet, and exhausting field conditions. We have provided these young scientists with training both inside and outside of Guyana. Some have moved on to other areas of interest, others have gone on to advanced degrees and some continue to work with the Program; we are very proud of all of them. In Guyana what started out as a dream and some collections became the Centre for the Study of Biological Diversity.



*Centre for the Study of Biodiversity, the extension is visible in the rear (Photo by CLK).*

### Centre for the Study of Biological Diversity

As the BDG Program, along with other institutions, began depositing collections in Guyana, it quickly became apparent that the herbarium and zoology rooms at UG were too small to accommodate their growth. Thanks to a generous donation from the Royal Bank of Canada and ongoing support from USAID, the need for a central repository of all biodiversity collections was realized and this gave rise to the Centre for the Study of Biological Diversity (CSBD or the Centre). The Centre is a non-governmental organization dedicated to the study, documentation and conservation of nature. Opened in 1992, the Centre houses an herbarium, a zoological collection, a library, and staff offices. Recent growth of the collections has maximized the space provided and an extension was completed in 2004 to accommodate this growth thanks again to USAID. The Centre is now a key vehicle within Guyana for the development of a full range of education, research and training programs consistent with Guyana’s effort to conserve and manage its rich biodiversity on a sustainable basis.

**Mohamed “Harold” Ameer** and John Pipoly met just after John arrived in Georgetown. Harold quickly became the principle driver for the BDG Program until his retirement in the late 1990’s. For many people who worked with BDG during the late 1980’s and early 1990’s, Harold was the first and last person they saw in Guyana. He gave a great tour of Georgetown took care of many visitors.



*Harold outside the BDG house in Guyana ca. 1994.*

**Dookie “Jackie” Arjoon** (potential graduate student) fell in love with animals when she first accompanied **Dr. Jay Cole** and **Carol Townsend** into the field to collect herps. She finished her bachelor’s degree at the University of Guyana and continued her interest by collecting specimens. In 1998 Jackie was accepted into the RTP Program at the Smithsonian where she contacted museums and obtained electronic data of fish collections from Guyana. Currently she is in New York and plans to apply to graduate school.



*Jackie Arjoon in the Zoology Hall, CSBD (Photo by CLK).*

**Janette Bulkan** (Ph.D. student, Yale School of Forestry and Environmental Studies) is a second year doctoral student researching tropical forestry policies and practices in Guyana and Surinam. She has degrees in Anthropology from the Universities of Manitoba, Canada, and Texas at Austin. Janette worked full-time at the Amerindian Research Unit (ARU) in the University of Guyana (UG) from 1985 to 2000, and then part-time to 2003. There, in collaboration with full-time and part-time staff, she helped to develop the ARU into a functional resource centre, providing services to a wide UG and extra-UG clientele, including Guyanese and non-Guyanese institutions, relating to the dissemination of data, information and knowledge on indigenous, interior, and other issues. The ARU also designed and taught courses and modules relating to indigenous peoples and indigenous issues and launched an Amerindian Display Room. They bid for and managed projects, sometimes in collaboration with foreign Universities, related to the full range of Amerindian issues and concerns such as legislation, natural resource issues, bilingual education and the chronicling of unique Amerindian ways of living and culture. From 2000 to 2003 Janette worked with the Iwokrama Rainforest Programme in Guyana, in participatory resource management, sustainable livelihoods, Makushi linguistics, environmental education, monitoring and evaluation, and cultural diversity awareness and protection. She has published on indigenous peoples and forest issues in Guyana, including in publications and reports issued by the International Forestry Review (2004), *New West Indian Guide/Nieuwe West-Indische Gids* (1999), *Tropenbos* (1998, 1999) and *Social and Economic Studies* (1990). Janette recently visited NMNH to do some research and work in the Anthropological Archives.



*Janette Bulkan*

**John Caesar** (University of Guyana) served in several capacities at UG including Dean of the Faculty of Natural Sciences. For a number of years he took an active roll in running the Centre. A few years ago he took a sabbatical and although he is still on campus he has other duties and is not working with the Centre.

**Malcolm and Margaret Chan-A-Sue** (pilot and tour organizer, mentors and friends) have been a part of the BDG for many years. Malcolm has been our “pilot of choice” and Margaret has been indispensable as a super-organizer and budgetary advisor. Many of our trips are logistically difficult, and the Chan-A-Sues always manage to fix things up so we can do our work. Margaret and Malcolm spend part of each year visiting grand children in England and Antiga.



*Malcolm and Margaret’s 40th Anniversary.*

**Andre Chanderbali** (Postdoctoral Associate, University of Florida) was born on 29 April 1969 in Georgetown, Guyana. During his undergraduate education at the University of Guyana he developed a keen interest in botany and spent many days hiking in out of the way places in Guyana. After graduating in 1991, Andre furthered his botanical training at the Smithsonian (NMNH Intern – 1992) and the University of Utrecht, developing a deep interest in the family Lauraceae. He then went to the U.S.A. for graduate school at the University of Missouri-St Louis and the Missouri Botanical Garden where he examined taxonomic, phylogenetic, and biogeographic issues in Lauraceae. He earned an MS (1996) and a Ph.D. at the University of Missouri - St. Louis (2001). Andre then returned to Guyana and became a member of the UG faculty for two years. He is currently a post-doctoral associate at the University of Florida and focuses on floral evolution and developmental genetics in the Lauraceae. He looks forward to a productive academic career and a fulfilling personal life shared with his wife, Deborah.



*Andre and Deborah at their wedding, 5 July 2003.*



Chris Chin(rt) with Jackie Arjoon, at one of Tom Hollowell's mangrove plots on the Waini Peninsula, NW Guyana, 1998.



Phillip Da Silva at the front entrance to the CSBD (Photo: TH).



Keith David in the mangroves at Shell Beach Guyana, with Karen Redden (photo: TH).



Kristine Erskine in the CSBD (Photo by CLK).

**Christopher Chin** (Masters student, Brandeis University) holds a Bachelor's degree in Biology from the University of Guyana. Before graduating he participated in an expedition with David Clarke to Waukauyengtipu, north of Roraima, and with Tom Hollowell to the mangroves of the Waini Peninsula. He has just received his Masters degree in Sustainable International Development from Brandeis University, Heller School for Social Policy and Management in Waltham, MA, under a Feldman Fellowship. Prior to graduate school Chris worked as a wildlife research assistant and project leader in Aquarium Fish Trade Development at the Iwokrama Rainforest Centre, Guyana. He also served as a scientific officer for the Environmental Protection Agency - Guyana. Chris plans to stay in the Boston area for the next few months.

**Phillip DaSilva** (Dean, Faculty of Natural Science, University of Guyana) received his B.S. from the University of Guyana and his M.S. from the University of the West Indies. Phillip's research interests are biodiversity and environment management, coastal zone management, and coastal and marine biodiversity studies with a special interest in mangrove ecosystems. Although as Dean, Phillip is involved in the day to day management of the Faculty of Natural Sciences and the Centre for the Study of Biological Diversity (CSBD), his goal is to be more involved in specimen curation at CSBD with a view to studying Guyana's natural history and biodiversity records. Phillip is also the co-editor of the *Contribution to the Study of Biodiversity* series produced by the CSBD.

**Naraine Datt** has been the night guard at the BDG house in Georgetown Guyana for many years and he was a great friend of Pizza, our cat. He continues to work for the Program.

**Keith David** (Assistant Lecturer, University of Guyana) received his B.S. in geography/biology from the University of Guyana. Early in his University career, Keith went on **H. David Clarke's** 1997 Waukauyengtipu expedition, together with Chris Chin, Tom Hollowell, and Claudius Perry. During his junior year Keith took a year off from studies to join Steve Fratello in a six month butterfly and moth expedition in Guyana. In early 2001 Keith went with Karen Redden to Tom Hollowell's mangrove site on the Waini Peninsula, and then traveled to Washington, DC and participated in the SI/MAB Measuring and Monitoring Course and the RTP Internship program (2001). Keith's interest is entomology with a focus on the butterflies of Guyana. He is hoping to go on to graduate school in Trinidad. In the meantime he is an assistant lecturer at the University of Guyana, Division of Social Studies (Geography), prepares EIA/biological surveys, and is Acting Marketing Manager and marketing assistant at Demerara Distillers Limited (Pepsi and Rum). Keith is also working with the youth from Habitat for Humanity – Guyana.

**Kristine Erskine** (Scientific Officer, University of Guyana) began her studies at the University of Guyana in 1997 with the aim of studying Biogeography. However, in 2001, due to a few changes in her major she graduated with a B.S. in Biology (minor chemistry) from the Faculty of Natural Sciences. In 2003, she graduated with the B.A. in Geography (minor tourism) from the then Faculty of Arts, University of Guyana. After the completion of her degrees she taught biology at a private secondary school at the Advanced and Ordinary Levels for about two months before taking up the job as a Scientific Officer in the Department of Biology, UG. In addition to her job in the Biology Department, she is also a cross faculty lecturer in the Department of Curriculum and Instruction, School of Education and Humanities where she teaches primarily Biology and Integrated Science courses. As a result of such teaching assignments, in 2003 she enrolled into the Post Graduate Diploma of Education majoring in Science. She is currently in her final semester of this diploma which she expects to graduate with a Pass with Distinction. Kristine hopes to pursue a Masters at the University College London in Freshwater and Coastal ecosystems beginning in September 2005 and subsequently, if all goes well, a Ph.D in a similar field. In ten years time, in addition to having a family, she hopes to be Coastal Researcher or a Coastal Land use specialist, since Guyana is in dire need of such experts. Kristine's hobbies include being involved in church activities, attending the gym, reading, and surfing the net.

**Ganeshwar Gharbarran** (Businessman, Canada) was a senior field assistant at the Guyana Forestry Commission when he went into the field with John Pipoly, our first resident collector. His original degree had not been a four year program so, with the support of BDG he returned to UG to complete a B.S. In between classes and studies, Ganeshwar worked at the Centre filing plant

specimens, supervising and teaching plant mounting, and then participated in the RTP internship program at NMNH in 1992. In 1993 he married and he and his wife moved to Ontario, Canada where he now works for ABC Plastic Moulding. Ganeshwar is a coauthor of the Hollowell et. al, 2000 “*Smithsonian Plant Collections, Guyana: 1986 – 1987, John J. Pipoly, III*”.

**Doorjodhan Gopaul** (Scientific Officer, University of Guyana) is in charge of the Jenman Herbarium at the University of Guyana. He participated in many Smithsonian expeditions with McDowell and Kelloff in the early 1990’s. Gopaul still teaches labs at UG and he was a coauthor on Hollowell et. al, 2000. “*Smithsonian Plant Collections, Guyana: 1991 – 1992, Tim McDowell*”



Gopaul on the Kamarang River (photo: T. McDowell).

**Wiltshire Hinds** (Businessman, USA) participated in many expeditions with the staff from the NMNH Division of Birds. He was an RTP Intern in 2002. In 2003 he married and is now living in New York. He is currently working while his wife finishes medical school. Wiltshire is hoping to apply to graduate school in 2006. He is a coauthor of Milensky et al. (in press) “Birds.” IN: Reynolds & Hollowell. *Checklist of the Terrestrial Vertebrates of the Guiana Shield*.

**Jewell Hinds** mounted plants for the Guyana National Herbarium, CSBD from 1992 until 1996. She still resides in Georgetown, Guyana.

**Macsood Hoosein** (Environmental Protection Agency, Guyana) graduated from the University of Guyana; he earned a Masters degree from University of West Virginia. After graduation he returned to Guyana and was a lecturer in the Faculty of Agriculture, Forestry Unit at UG. He participated in the SI/MAB plot study at the Aoraima Mining site in 1993. He moved to a job with the Guyana Environmental Protection Agency a couple of years ago.



Wiltshire Hinds

**Deirdre Jafferally** (Iwokrama) graduated from the University of Guyana with a B.S. She has participated in several Smithsonian and Royal Ontario Museum expeditions. Her main interest is in bats and she has conducted her own research on reproductive patterns of insectivorous and frugivorous bats. She hopes to go onto graduate school. She currently works at the Iwokrama Rainforest Reserve in Guyana.

**Tsitsi McPherson** (Graduate student, University of Connecticut) first became associated with the BDG Program in 1997, at the time she was a freshman taking a few classes at the University of Guyana. After accompanying resident botanist H. David Clarke into the field she began working in the herbarium. It has been a long road since that initial contact with the BDG Program. She graduated from the University of Guyana in 2001 having majored in Geography and Biology with a minor in Chemistry and during that time she was an RTP intern in 2000. After she graduated, she worked at Queens College Secondary teaching geography and biology before returning to the University to work at the Center for the Study of Biological Diversity (CSBD) caring for both botanical and museum collections as a Scientific Officer. In 2003 she was accepted to the Ecology and Evolutionary Biology program, University of Connecticut where she is working on her Masters in Science. Her interests reflect her desire for environmental policy with a strong focus that includes biology, anthropogenic causes of biodiversity loss, and related sociological implications. Tsitsi’s research examines understanding what drives species diversity, composition, and abundance on different soil and topographic environments, and the possible policy implications for endangered and threatened species.



Tsitsi (rt) with friends at a scientific meeting.

**Diane McTurk** (Owner of Karanambo and river otter activist) is a long time supporter of environmental activities. Her great-great-grandfather immigrated from Scotland to Guyana around 1790. Diane’s father, Tiny McTurk, acquired and developed the Karanambo settlement into a 125 square mile cattle ranch. Today, cattle still graze the land but Diane’s passions are focused on the giant river otters. She has developed the family home at Karanambo into an eco-lodge and has it set up for the rehabilitation and release of orphaned otters. Many of these otters were captured as pets or they were bought to Diane after the mother had been killed. Diane McTurk is trying to develop the Karanambo Trust to continue her work with the otters.



Diane McTurk with “Peter the Great” (*Pteroneura brasiliensis*; Photo: CLK).



Dyantie Naraine at CSBD, April 2001.



Naseem with Graham Watkins (L), and Vicki at the 2001 Biodiversity Symposium in Georgetown.



Claudius with Erin Tripp

Pizza the Cat (photo by CLK)



Waldyke with his poster at the 2001 Biodiversity Symposium in Georgetown.

**Dyantie Naraine**† joined the Centre in 1996 as the Secretary/ Receptionist. She took care of the day to day running of the Centre and occasionally helped with the curation of the herbarium. She was instrumental in helping organize the Biodiversity of Guyana symposium that was held in Georgetown in October of 2001. Dyantie passed away suddenly in June 2002 from complications of Dengue fever.

**Naseem Nasir** (Head, GIS Lab, Lands and Survey Office, Georgetown, Guyana) graduated from the University of Guyana. He received advanced GIS training with the National Zoological Park – CRC (Smithsonian Institution), Front Royal, Virginia, and in Utrecht, The Netherlands in 1998. Naseem ran the GIS lab at the Centre for many years and assisted with the original digitization of basemaps for Guyana and data analyses. He was a co-author of the World Bank project report. Naseem now works for the Guyana Government in the Lands and Survey Office as head of the GIS Lab.

**Claudius Perry** (Guyana, Makushi Amerindian) is from the Aishalton area of Guyana. He first began working with the BDG Program with David Clarke in 1997. Claudius is a tremendous asset in the field and has now accompanied many BDG and other scientific expeditions. He continues to live in Aishalton, and is now married and has two children.

**Pizza the Cat**† (Manager, Pest Control) became part of the Program when Shawn Lehman, BDG Resident Manager, coaxed a small stray kitten into the house with a piece of pizza, hence his name. Pizza had free run of the house in Georgetown, jumping in and out of the various windows. He was a small, quiet cat that spent most of the day sleeping somewhere in the house, often on his back. At night he caught bats, lizards and anything else that moved. In the early years he often got into cat fights at night and because of his small size he usually got the worst of it. However, he was “fixed” by Lucy Spellman – when she was the veterinarian at the National Zoo in Washington - prior to becoming the Director – and the fighting ended. Over the years, when Lucy stayed at the house she took care of Pizza’s medical needs, and so he had a very high profile vet! He was a happy healthy cat with lots of attention from the BDG staff and visitors. The house guard, Naraine Datt, became very attached, and Pizza was often seen sharing Datt’s evening meal. Pizza did get into trouble one day by eating a bird skin specimen that was left in the sun to dry by members of a Philadelphia Academy of Science expedition. Pizza passed away in the summer of 2003.

**Waldyke Prince** (Iwokrama Rainforest Reserve, Guyana) is a true naturalist. He came to work with us as a field assistant with a broad knowledge of the animals of Guyana. He participated in the SI Internship program in 1995. A graduate of the University of Guyana, Waldyke now spends most of his time at Kurupukari, the field station of Iwokrama Rainforest Reserve.

**Indarjit “Charlie” Ramdass** (Environmental Protection Agency, Guyana) received his Ph.D. in Forestry from the University of Edinburgh, Scotland. After graduating, he returned to Guyana and became Head of the Department of Biology at the University of Guyana. Dr. Ramdass moved on to serve as Dean of the Faculty of Natural Sciences. During his time at UG, he worked with the BDG Program on fund raising, expeditions, collections, and the building of the Centre for the Study of Biological Diversity (CSBD). Ramdass is currently the Director of the Natural Resource Management Division of the Environmental Protection Agency, Guyana.

**Father Charles L. Roland** (Pastor, Imbaimadai) takes care of an orphanage in Imbaimadai, a remote region of Guyana. Because of its isolation and the difficulties of getting anything to this area, the children of the orphanage are sometimes forgotten. The Biological Diversity of the Guiana Shield Program has facilitated the collection of food, clothes, toys, and books (ca. 15 boxes). Donations came from the family of Lucy Julian Wagner of Falls Church, VA, Jessie Funk and her fellow seniors at Notre Dame Catholic High School in Elmira, NY, and some of our field botanists including Karen Redden. The donations have been sent to Imbaimadai for the children of the orphanage and the people of Father Roland's parish who are in need. Our efforts were well received, and as Father Roland writes "Those gifts have meant so much to us, as the children here never receive any gifts."



*Father Roland (2<sup>nd</sup> row, 4<sup>th</sup> from right with the sunglasses) and members of his church.*

**Coralie Simmons** (Conservation International, Guyana) was sponsored by the BDG Program to take part in the 1996 Latin American and Caribbean Workshop in Washington, DC and in the 1998 SI/MAB Biodiversity Assessment and Monitoring Course in Front Royal, Virginia. She received her B.S. from the University of Guyana, was hired as a Scientific Officer at UG, and taught Biology labs. She also was in charge of the Guyana National Herbarium, at CSBD and spent hours curating and filing plant specimens. In 2000 she received her M.S. degree from University of Leiden, The Netherlands (area of specialization: systematics of macrofungi). Coralie is now the Manager of Policy and Planning at CI – Guyana.



*Rohnie in the new section of the CSBD (photo by CLK).*

**Rohnie Singh** (Housekeeping, CSBD) was hired when the Centre first opened in 1992. She is a single parent of two children and has a beautiful granddaughter.

**Michael Tamessar** (Scientific Officer, UG, retired) was formerly the Scientific Officer – Zoology, University of Guyana. He retired in 2004 and is enjoying working in his garden and working with the EPA-Guyana producing Environmental Impact Statements.



*Mike (rt) with Eric Christenson at Kaieteur.*

**Dr. George Lloyd Walcott†** (1928-2001) contributed to furthering education in Guyana all his adult life. He began by spending a decade (1949-1959) as a high school teacher and then went on to the University of London where he received his B.Sc. in chemistry (1963), M.Sc. (1965) and PhD (1967). During his doctoral studies he was a part-time demonstrator in Chemistry at UG. In 1968 he began as a Lecturer at UG and served in many academic posts culminating in his tenure as Vice-Chancellor (retired 1991). He also served on many national and international boards and advisory panels. As Vice-Chancellor he was the primary supporter of the beginning Biological Diversity of the Guiana Shield Program and it was his enthusiastic support that allowed us to obtain the funding from the Royal Bank of Canada and the original USAID grants. The Biodiversity Symposium in 2001 was dedicated to Dr. Walcott and he remains dear to our hearts as someone who was a true educator and visionary.



*Dr. Walcott at the opening of the Centre.*

**Graham Watkins** (Executive Director, Charles Darwin Foundation) has a long history of association with Guyana. He was born in Guyana when his father worked there (he is a citizen of the United Kingdom), graduated from Oxford in 1985, and received his PhD from the University of Pennsylvania (through the Philadelphia Academy) where he studied frogs. He came to Guyana to conduct a zoological survey of the Iwokrama Rainforest and stayed on in various capacities, including Senior Wildlife Biologist. From March 2003 to February 2005 he served as Director-General of the Iwokrama Programme. During his time in Guyana, Graham worked extensively in the field as well as at central planning and fundraising levels. For several years he lived next door to the BDG house and the two programs shared resources and joint expeditions. He participated in the 2001 symposium and deposited specimens in the Centre. In February 2005 he took on the Darwin Foundation job in the Galapagos Islands. See photo under N. Nasir.

**Cynthia Watson-R.** (PhD Graduate student, SUNY – Syracuse), while still an undergraduate student at the University of Guyana, was sponsored by the BDG Program in 2000 to take part in the SI/MAB Measuring and Monitoring Course in Virginia. After graduating from UG she was hired as a Scientific Officer in the Faculty of Natural Sciences, UG where she databased and inventoried the CSBD zoological collection. In May of 2005 she received her Master's degree at the University of Missouri – St. Louis working with Godfrey Bourne. She has been accepted into the PhD program at SUNY-Syracuse and has a Teaching Assistantship for the fall of 2005. She plans to work on Arapaima community structure and organization in Guyana. Her immediate plans are to travel to Guyana during the summer of 2005 to begin field work.



*Romeo with collecting gear, near Karasabai. (photo: K. Redden).*

**Romeo Williams** (field assistant) has been an extremely valuable member of many Smithsonian expeditions. He began working as a field assistant for Terry Henkel in 1993 and continued through David Clarke. He has assisted in collecting everything from plants to birds. He has an excellent knowledge of the bush and he is the chief organizer of supplies for many expeditions. Romeo is part Amerindian and lives with his family along the Essequibo River near Bartica.



*Sally Adkins in 1994*

**Sally Adkins** participated in the NMNH RTP program in the summer of 1994. She graduated with a BS from the University of Missouri - St. Louis. After she graduated she worked as a contractor for the BDG Program and spent a few months in Guyana managing the BDG house and working at the Centre, UG. The last we heard she was in graduate school in Florida but we have been unable to locate her.

## **Missing in Action**

**Maggie Dinse** was a student at Indiana University (Bloomington, IN) when she was a participant in the RTP program in 1987. Her project involved the identification of the Guianas specimens from the Rubiaceae (coffee) family. We don't know where Maggie is now.



*Maggie Dinse in 1987*

**Brian Elms** worked with Javier Piedra as an intern. He spent the summer of 1993 in Guyana working in the collections and helping run the Centre for the Study of Biological Diversity. During his time in Guyana he contributed the stuffed caiman to the collection at the Centre. Brian was always more interested in business than biology and we have no idea where he might be.

**Kate Lance** traveled to Guyana in late 1991 to assess the possibilities of setting up research project to study the structure and composition of the forests and to identify economic timber and non-timber uses of the forest. She collected plants at Kaieteur National Park and returned to Connecticut to continue her studies as a student at the Yale School of Forestry. Since she returned to school we have lost contact with her, however she is apparently working with Geographic Information System standards for developing countries at the USGS EROS Data Center.

**Suroojnauth Tiwari** was the Scientific Officer to the Jenman Herbarium (UG) in 1986 - 1988. He participated in the SI RTP Intern Program in both 1989 and 1990. Tiwari received his BS from the University of Guyana, his Masters in Biology from Lehman College, New York and was a Ph.D. candidate at Lehman College in 1994. We have lost touch with Tiwari; the last thing we heard he was living in the USA but traveling to Guyana on a regular basis.

# Miscellaneous Photos



Carol Kelloff, Keitha Datillo, Susan Grose, Sally Adkins, Haldra Roberts, Vicki Funk, Jeanne Skalsky.



*Passiflora candida*,  
Clarke 8520



The University of Guyana campus during the January 2005 floods. The Biodiversity Centre and collections were undamaged.



*Vanilla bicolor* at Kaieteur.



A *Megasoma actaeon* female.



Some of the Participants in the 2001 Symposium in Georgetown, Guyana.



# Biological Diversity of The Guiana Shield Program

## A Brief History

[www.mnh.si.edu/biodiversity/bdg/](http://www.mnh.si.edu/biodiversity/bdg/)

### Results

Our latest annual report has a summary of our accomplishments and is on the website as well as a complete list of our publications, collaborators, etc. Our accomplishments for 2004 include:

1. The completion of the databasing and barcoding of the plant specimens in the US National Herbarium that were collected in the three Guianas (minus one family we cannot finish because someone has it squirreled away). The total no. of records is 108,845, which consists of 46,125 BDG collections, and 62,720 historical specimens all databased and barcoded by BDG.
2. The plant and animal collections were moved into the new addition to the Centre for the Study of Biological Diversity in Guyana.
3. The *Phytogeography of the Kaieteur Falls, Potaro Plateau, Guyana; floral distributions and affinities* (Kelloff & Funk, 2004) and Smithsonian *Plant Collections, Guyana: 1990-1991, Tim McDowell* (Hollowell et al., 2004) were published.
4. The *Checklist of the Terrestrial Vertebrates of the Guiana Shield* is in final edit.

### Area

The Guiana Shield (GS) is a distinct geologic region that underlies Guyana, Surinam, French Guiana and parts of Venezuela and Brazil. It is biologically extremely rich but poorly known. Unlike other regions of South America, approximately 70% of the natural habitat of the GS remains pristine due to historically low population and economic pressures. These natural areas are now seriously threatened by logging and gold and bauxite mining. It is important that we gain an understanding of the flora and fauna of the GS so that decisions can be made on critical areas that have high priority for conservation and so data can be collected from areas that might ultimately be destroyed. Because it is an ancient, fairly isolated geological area, the GS is rich in endemic plant and animal taxa, with many more likely to be discovered with additional exploration. In addition, because this area has been long neglected by biologists, it is often an area of “inadequate information” for many biodiversity analyses.

### Background

The “Biological Diversity of the Guiana Shield Program” (BDG) is a field-oriented program of the National Museum of Natural History that began in 1983 (Federally funded since 1987). The goal of the BDG is to “study, document and preserve the biological diversity of the Guiana Shield.” Most of the Program’s field work has taken place in Guyana, but data analyses have been expanded to cover the majority of the GS. In Guyana, the BDG operates under the auspices of the University of Guyana (UG), with which the Program has a signed an agreement, and field work is undertaken with cooperation of the Guyana Environmental Protection Agency with whom the Program has an MOU (Memorandum of Understanding). Individual collecting agreements are negotiated with the other countries in the GS as they are needed.

The BDG Program was started as a part of the Flora of the Guianas project headed by the Utrecht National Herbarium. Richard Cowan (SI, USA) from the Department of Botany collaborated with botanists from Utrecht (The Netherlands), Paris (France), Berlin (Germany), New York (USA), Cayenne (French Guiana), Paramaribo (Surinam), and Georgetown (Guyana) to start the project. The goal was to produce a complete flora of the three Guianas. When Cowan retired in 1986, Laurence Skog became the Director, and in 1987 when Skog became Chairman of the Department of Botany (SI) Vicki Funk took over as Director. The direction of the Program was changed in 1988 from a flora project to one focused on biological diversity, and in 2000 it expanded to cover other parts of the GS.

### Funding

Originally the project was funded through Scholarly Studies (SI) with some funds from the New York Botanical Garden. In 1987 the Program was funded as a line item in the Congressional budget that covered both the BIOLAT program headed by Terry Erwin and the BDG Program. Significant increases came from Congress for several years before a gradual decline in funding set in.

### Strategy

The BDG Program is designed to provide specimens and data to address questions about many groups of organisms from locations across the GS. Information from BDG collections and from other herbarium collections is used to produce checklists, vegetation maps, floristic and faunistic studies, revisions, and monographs. The data generated from these studies are used to ask questions about the make up of GS biological diversity, such as species turnover rates, surrogate taxa, and areas of high diversity. Finally, the BDG is exploring practical applications of the data that have been collected through regular collaborations with conservation and government agencies.

Because of the urgency of sampling from critical areas of the Guianas, the BDG employed a series of resident plant collectors based in Guyana, who organized collecting expeditions and assisted in the field work of other visiting scientists. From 1985 through 1997 the resident collector was a full-time botanist. Budget cuts made it impossible to continue resident collectors and the Program switched to funding part-time collectors in a variety of disciplines. In recent years field work has been carried out on plants (3 mos.), butterflies (6 mos.), birds (6 mos.), and ants (3 mos.). Over the years several postdoctoral fellows have been hosted by the Program to work through some of the specimens collected on our expeditions and to produce treatments, including E. Judziewicz (grasses), A. Newton (mosses), H. D. Clarke (legumes) and J. LaPolla (ants).

Each year approximately three to six expeditions are organized, and other expeditions involving a total of approximately 20 scientists are assisted. Material collected on expeditions is distributed to, or seen by, leading specialists all over the world. A set or subset of all collections is deposited in the “Centre for the Study of Biological Diversity” in Guyana, either upon completion of expeditions or following identification, as agreed to with agencies in Guyana.

### **Data**

From the beginning of the Program’s field work, all collections have been databased, geo-referenced by BDG, and identified by a large network of specialists. This has resulted in large, accurate data sets that provide a wealth of information about the area. In addition, the Program maintains an active project to database all collections from the GS held in the US National Herbarium, and to georeference as many as possible so they can be included in analyses. A substantial portion of this work is done by unpaid undergraduate interns. All plant specimens from the three Guianas have been entered and we anticipate that at current rates the Program will have entered data for the Venezuelan Guayana by the end of 2006.

### **Information**

Label data from all BDG plant collections are maintained in a database that is used for scientific, educational, and conservation purposes as well as contributing to larger NMNH inventory efforts. Data from the animal collections are maintained by the respective departments. These data served as a starting point for the *Checklist of the Plants of the Guianas* project as well as the *Checklist of the Terrestrial Vertebrates*. Also, the data have been used by Conservation International, World Wildlife Fund, Natural Resources Institute (U.K.), and the Government of Guyana to compose reports and proposals and to make informed conservation decisions. BDG is using the Guianas Checklist database as a starting point for a project in collaboration with the Missouri Botanical Garden, *The Checklist of the Plants of the Guiana Shield*. Since the GS is a natural area, this checklist will allow us to ask questions about biodiversity in an evolutionary context. This and many other BDG publications can be found on the Program’s website.

### **Education & Training**

In addition to collecting and research, the BDG Program trains students and scientists in both the US and Guyana, assists in their research, and has established and helped to maintain collections. Over the years several events have been hosted in Guyana, including two Amerindian training courses, two bird preparation courses, two plant identification courses, a variety of lectures at the University and public venues, and a public scientific symposium on the biological diversity of Guyana.

Training is another facet of BDG’s collaboration with scientists and students from Guyana. Nearly every year since 1987 the Program has hosted at least one Guyanese student or UG staff member at the Smithsonian. Many have participated in the Natural History Museum’s Research Training Program or the SIMAB training courses.

### **Facilities in Guyana**

BDG worked with UG to raise funds from the Royal Bank of Canada to construct a new building, the “Centre for the Study of Biological Diversity,” located on the campus of UG. The Centre houses collections and research space, provides a library, and houses a Geographic Information System (GIS) facility. The goal of the Centre is to combine research, education and conservation in the study of biological diversity. The Centre is funded from outside grants (mostly from USAID) with some funds provided by the BDG for specimen curation. The Center is currently without a Director because of a lack of funds. The increase in specimens over the last 10 years lead to a USAID funded expansion of the Centre that was completed in 2004.



## **Concluding Statement**

The goal of the Smithsonian Institution is to promote the increase and diffusion of knowledge. We believe that the BDG exemplifies that goal in that it strives to study, document, and preserve the biological diversity of the Guianas, while at the same time providing the opportunity for excellent scientific research that can provide information to answer questions on biodiversity, conservation, and education.

