

Plants and Heritage

Society for Economic Botany Caribbean Chapter

Issue 7



SEB 2017 Portugal—Bragança , June 4th-9th

The 58th annual conference of the Society for Economic Botany is slated for the exciting destination of Portugal this year. The conference is being held jointly with Hispano Português de Etnobiologia (EHPE) and will be hosted by the Polytechnic Institute of Bragança (IPB) and the Mountain Research Centre (CIMO). The theme for this year's conference is **Living in a global world: ethnobotany, local knowledge and sustainability**. Plenary speakers include Past President Cassandra Quave, Emory University, USA; Ina Vandebroek, New York Botanical garden, USA; Łukasz Łuczaj, University of Rzeszow, Poland; Rainer Bussmann, Missouri Botanical Garden, USA; Ulysses Albuquerque, UFPE, Pernambuco, Brazil; Victoria Reyes-García, ICTA-UAB, Barcelona, Spain.

Organized symposia will see papers presented surrounding the theme with a focus on areas such as Ethnobotany of mountain regions; Economic botany with approaches from archaeobotany, ethnography and history; Ethnobotany, ethnopharmacology and natural products. Workshops and field trips will round off the experience in Bragança.

<http://esa.ipb.pt/seb2017/en/>

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Mirroring the Global Perspective—by Tricia Tikasingh

In the previous edition of the SEB - Caribbean Chapter's newsletter (2016), Dr. Peter explored and considered what 'Economic Botany' meant particularly for the Caribbean and the mandate of the Chapter, being clear that 'the Caribbean perspective must mirror the global perspective'. In regards to people, plants, traditional knowledge and culture, there are two global initiatives which I feel are very important to the region, and the Chapter can play some role in both.

The first is the WHO Traditional Medicine (TM) strategy 2014-2023. Within the region, work has been ongoing for decades to systematically document the TM practices through TRAMIL (Traditional Medicine in the Islands) and other researchers. Some have suggested that there is a need to formally recognise and integrate TM within the National Healthcare Systems in the Caribbean (Mitchell, 2011). The WHO Traditional Medicine Strategy 2002-2005 had set out 4 objectives which covered policy towards integration where appropriate; promoting safety, efficacy and quality through regulatory and quality assurance standards; improving access and affordability of TM to poor communities; and ensuring rational use by practitioners and consumers. It is clear there is still a lot of work to be done to achieve these objectives in the Caribbean. The new strategy document acknowledges that globally challenges have been faced in achieving the objectives, and is encouraging member states to actively engage in three key areas: establishing the knowledge base through which policies can be developed to recognise the role of TM; strengthening quality assurance standards and procedures, education and training to ensure safe and efficacious use of TM; promoting integration within the national health services by using an evidence base that is appropriate for TM. TRAMIL is a starting point, but further work needs to be done to establish a cohesive evidence base that can support integration, and address the WHO TM objectives - past and present.

The second initiative is Food and Nutrition Security (FNS) for the region. Food security, improved nutrition and sustainable agriculture are highlighted within Goal 2 of the UN's Universal Sustainable Development Goals (2016). The Caribbean is very reliant on food imports, so the issue of food and nutrition security is currently pertinent. The FAO has worked within the region towards the development of a Regional Food and Nutrition Security Policy (Wilson, 2015), which has been encouraging. Traditional food plants offer local alternatives to consumers as a valid means of acquiring macro and micronutrients (Grivetti & Ogle, 2000). However, the traditional knowledge and agricultural practices are disappearing in the region. Traditional food crops are valuable economically and nutritionally (Ebert, 2014), and these commodities can contribute significantly to achieving food and nutrition security in the Caribbean. Again, more needs to be done to provide nutrient information, underpinned by the traditional and cultural knowledge which educates consumers, healthcare practitioners and those in the culinary and hospitality sectors. The Caribbean region has a rich biodiversity which is often marketed as part of the tourism offer, and increasingly culinary tourism is becoming part of the package. Outside of the Caribbean region, niche markets are developing around 'vegan' and 'gluten-free' nutrition alternatives, and the traditional food plants in the region offer options within these niches. There is a lot more to be done in the region. Information sharing, documentation, knowledge preservation and cooperation are key ways in which the society can work towards its mandate and contribute to the evolution of these initiatives.

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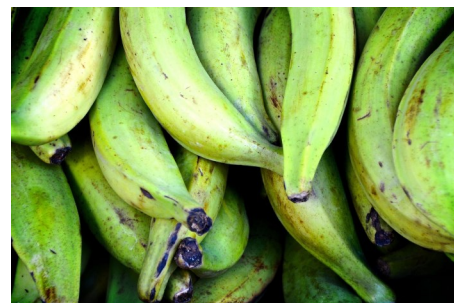
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Flower Forest Botanical Gardens Barbados

The Flower Forest Botanical Gardens Barbados is a rich plant resource on the island. Creatively managed by the Director, David Spieler, the plant reserve is home to a blend of indigenous and non-native species. Many species belong to the Zingiberaceae Family as seen in the images of the torch ginger (*Etlingera elatior*), Siam rose ginger (*Etlingera corneri*), Honeycomb or beehive ginger (*Zingiber spectabilis*). Heliconiaceae species are represented by the dramatic Beefsteak or fire cracker (*Heliconia mariae*) and the Lobster claw (*Heliconia caribae*) on this page.

This jewel of biodiversity sits in the Barbados 'Scotland district' (parish of St. Joseph) at 750 ft above sea level and on 53.6 acres. Mr Spieler is ensuring that this botanical legacy is preserved as the site is reserved for 'green' development only.

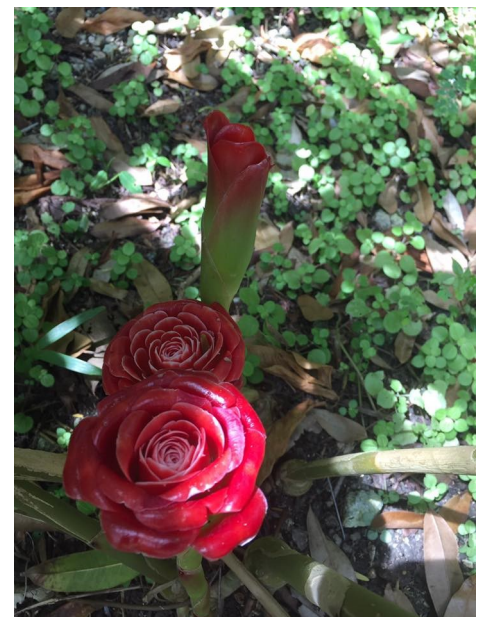
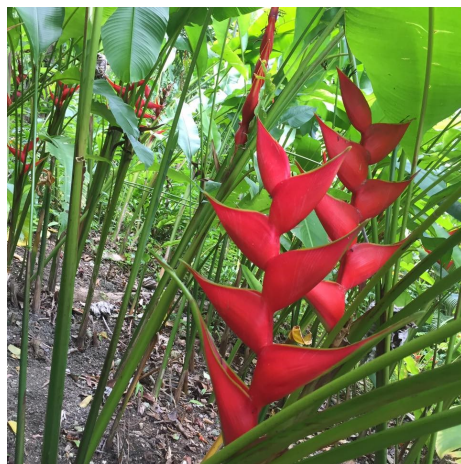
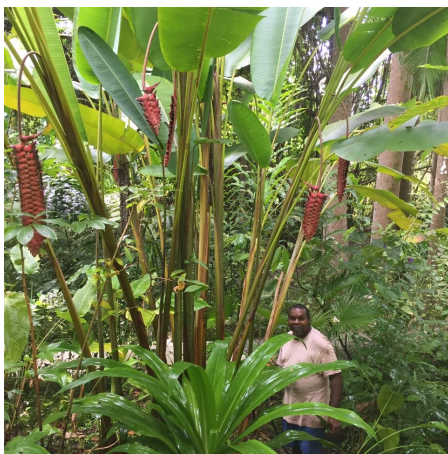
<http://www.flowerforestbarbados.com/>



David Spieler—Director, Flower Forest Botanical Gardens Barbados



"This botanical legacy is preserved as the site is reserved for 'green' development only"



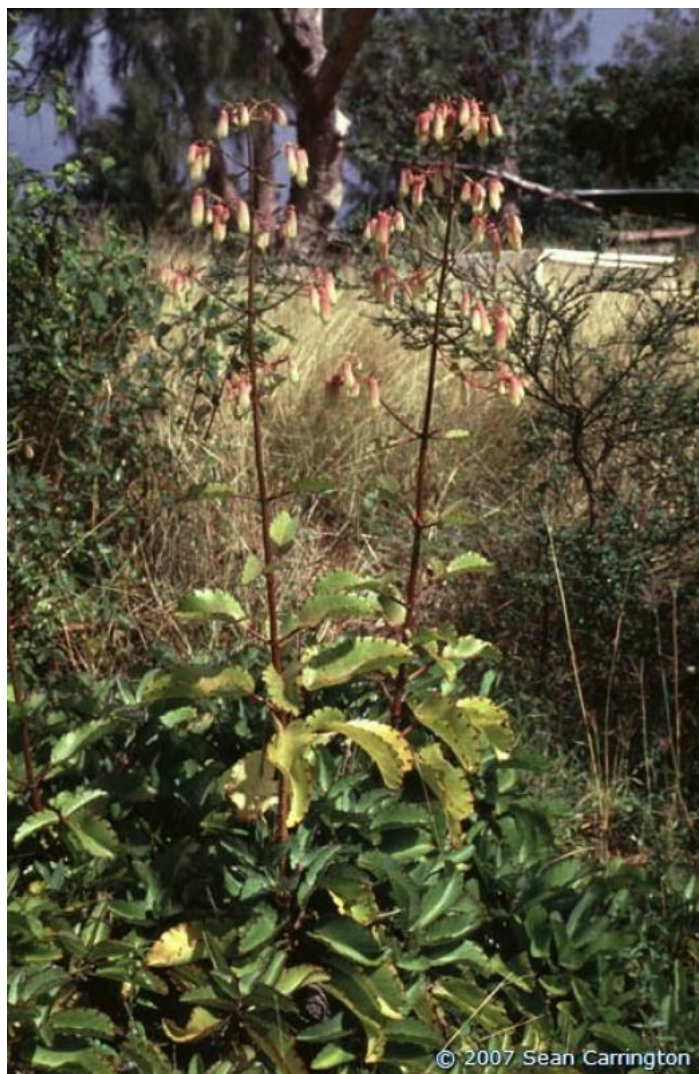
Top (l-r): Torch ginger, Honeycomb ginger; Bottom (l-r): Beefsteak heliconia, tended by the green thumbs of Dennis Allman, Lobster claw heliconia and Siam rose ginger.

Plants Of The Eastern Caribbean Online Database

The Caribbean is identified as a hotspot of biodiversity with a high degree of endemism. This valuable plant resource must be the subject of archival conservation which should be sustained by Caribbean contributions. The development and provision of the resource being shared in this issue was spearheaded by Dr Sean Carrington of the University of the West Indies, Cave Hill Campus. The main objective of the site is that of sharing with stakeholders and providing a facility for accurate identification of Caribbean native and naturalised species.

The site is updated regularly with input by regional experts. Entries are uploaded for over 2000 plants within the database. A sample entry is given for the plant *Kalanchoe pinnata*, commonly called Wonder-of-the-world in the English speaking Caribbean and is of traditional medicine value. The database can be searched by using either the common or scientific name for the plant under investigation.

Also of value at the site is access to the Barbados Herbarium of the University of the West Indies. This virtual herbarium was developed in collaboration with the Barbados Museum and Historical Society in a project partially funded by the Peter Moores Barbados Trust. Herbarium specimen, as showcased below, are accessible and cover a range of dried plants reflective of the biodiversity in Barbados and the Caribbean. <http://ecflora.cavehill.uwi.edu/>



Family: Crassulaceae

Scientific name: *Kalanchoe pinnata*

(lam.) Pers.

Common names: baby bush, colic bush, fey chofi, gewitout, kalabana, kawakte lezom, lamowi, Leaf-of-life, love bush, lucky bush, malotet, plok, salt fish, sweetheart bush, temetic, travel life, wonder-of-the-world, wonder-of-world



Profile of a Caribbean medical scientist



Diane Ignacio is a graduate of Howard University, School of Pharmacy Washington DC (1998), where she obtained her Doctor of Pharmacy degree and later a fellowship in oncology in 2009. She is currently pursuing a PhD in Biochemistry. Her research interest is Prostate Cancer Therapy: Using *in vitro* and *in vivo* models to evaluate the biological impact and the mechanism of action of natural compounds derived from indigenous plants. Her ambition is to discover novel treatments for the management of metastatic prostate cancer. Dr. Ignacio is currently an educator of Clinical Pharmacy at The University of the West Indies, Faculty of Medical Sciences, St. Augustine Campus, Trinidad and Tobago .

Dr Ignacio shares with the SEB community her views on the integration of traditional medicine into the medical degree curriculum.

How can evidence-based plant research lend support to traditional medicine in the Caribbean?

The Caribbean people have a history of herbal use for the maintenance and restoration of health, however the reported benefits of 'Caribbean herbs' is generally anecdotal. Moreover, the same plant is used for different purposes in different Caribbean islands which makes it a challenge to distinguish the real benefits from fables. The sale and use of traditional medicines are not regulated. The preparations are not standardised, the nature of the active ingredients are unknown and there is no agreement about the dosages. Thus as is the case for prescription drugs, the inappropriate use of herbs can pose a threat to the consumer's health. Evidence-based plant research could verify clinical efficacy and provide information regarding dosages and potential adverse effects that may occur during or after consumption of herbs.

Are there any bodies in Trinidad and Tobago currently working to bring traditional and modern medicine together?

Many years ago, there was an organization called The Caribbean Association of Researchers and Herbal Practitioners (CARAPA) that for some time promoted interaction between herbal practitioners, conventional medical practitioners and scientists. However, that group has been dormant for the last few years. I am not aware of any other group that is addressing this issue.

What are the challenges of integrating traditional medicine into the curriculum for a medical degree in the Caribbean?

The internet has converted planet earth into one global village with information, practices and ideas being shared rapidly. One consequence is an emerging consumer-driven approach towards holistic and integrative healthcare, grounded to a large extent on the anecdotal benefits of traditional herbs. Given this growing practice it is well worth the effort to integrate traditional and conventional medicine into the medical curriculum. Primary care providers need to be at the forefront providing information and guidance to patients about safe and effective use of all medicines so an integrated approach is best. Students will have to be prepared to meet those demands, so having it included in the curriculum is very important. Below are some of the challenges:

- Systems should be in place to verify qualifications of traditional medicine providers. There should be formulation of national policies, regulations and standards to ensure the appropriate, safe and effective use of traditional medicines. Who is willing to take on this task?
- The benefit of the use of traditional medicine is limited by being mostly anecdotal and not evidence-based. Funding for research will be needed to generate the data needed. There is also a lack of access to education on its usage.
- Practitioners will have to confront a number of important issues such as differences in cultures, credentials, quality assurance and training. Remember there are differences in beliefs of how healing takes place, in addition to the limited information about clinical outcomes for the use of traditional medicines

The development of the curriculum that will integrate traditional and conventional medicine in itself will be a tough task to accomplish. Faculty will find it challenging to come up with the best approach to integrate the curriculum. The process will need to be slow and done in small steps beginning with staff having sufficient common knowledge.

Bio-cultural Heritage (Flora) of the Hills and Valleys of Saint Lucia.

by

Laurent Jean Pierre (Jomo) (Ethnobotanical Researcher)

The flora of Saint Lucia is the most visible manifestation of the island's terrestrial biodiversity. This ubiquitous ecosystem can be seen and experienced from the shoreline to the mountain tops of the Pitons, La Sorcière and Mount Gimie, to name a few. These spaces are botanical paradises, rich and abundantly laden with plant and animal life. Plants appear in various shapes and sizes. Their architecture may take the form of herbs, grasses, trees, sedges, lianas, shrubs, and so on. They are extremely stubborn and versatile, thus enabling their survival even as epiphytes or parasites. The vegetation may be deciduous or non-deciduous, flowering or non-flowering, leafy or leafless. Plants inhabit all materials and spaces; indeed they are the natural cover of the wet and more so, the dry land.

St. Lucia's plant life can be divided into two major groups: the introduced and naturalized, and the indigenous species. The former are those plants brought into the island by early settlers and those introduced thereafter. They are mainly economic and/or ornamentals brought here to complement the native flora. Among the better known ones is breadfruit, 'bwapen' in Kwéyòl (local language), *Artocarpus altilis*, brought to the Caribbean by Captain Bligh in 1793, from the South Pacific islands for use as grub for the enslaved. As such, breadfruit is associated with the mutiny on the Captain's ship.

Although in the beginning, breadfruit was not welcomed as a culinary delight in the cuisine of the enslaved, with time, food insecurity required them to educate their taste buds to accommodate this earlier rejected sustenance. Consequently, locals often say, "that had it not been for breadfruit, mothers and their children would all have starved to death". However, second to none is the banana, 'fig' (*Musa L.*) or "green gold", which, until recently was king of the hills and valleys. It dethroned King Sugar in the last century to become and remain the chief export crop here. Although native in various forms, from India and Burma through the Malay Archipelago to New Guinea, Australia and Samoa as well as tropical Africa, it has, howev-

er, been cultivated and naturalized itself into the valley's vegetation. Because fruiting is not seasonal, this plant makes for a consistent, reliable livelihood and a good socio-economic crop. A ripe banana is often referred to by athletes as nature's 'power bar'.

Most of the plants used for food (staples) were introduced species, for instance, cassava, bananas (our main income earning crop), oranges and other citrus, sugar cane, cocoa, coconut, coffee, avocado, mango and the list goes on. Like the people in the Caribbean, these crops came from diverse places. Yet, not all the introduced species are edible; several are exploited as horticultural or ornamental plants, timber, medicine, dyes and other non-food purposes. Accordingly, the introduction of these plant species has brought tremendous economic benefits to this island. One often wonders: "what if these plant species were not here?" These introductions have truly enriched our flora and, by extension, our bio-cultural diversity, not to mention, the size and weight of our wallets.

Among the indigenous species are those 'unique' to Saint Lucia - these plant species cannot be naturally found anywhere else in the world. In this subcategory of endemics there are nine plants which are catalogued as specific to St. Lucia. The plants *Bernardia laurentii* and *Daphnopsis macrocarpa* (Maho piman gwan bwa) are St Lucian endemics. The former can be found only at the summit of Petit Piton while the latter is present in the National Rain Forest Reserve on the Barre D'Isle and on La Sorcière, and its bark is used as rope. These majestic peaks do not only capture our visual imaginings and envelop the lower land in their shadows; they sustain the hill and valley dwellers too.

Some have described the Saint Lucian cultural makeup as comprising a "marvelous multi-racial kalalou or pot-pourri." To fully clench or illustrate this, one must go back to pre-Colombian time when Saint Lucia was first inhabited by the Amerindians, then the Europeans, followed by the enslaved Africans and later the East Indians or indentured workers.



Laurent Jean Pierre lecturing to students at The Sir Arthur Lewis Community College on medicinal plants in the TRAMIL database.

"It is essential to conclude that the valley dwellers are the trustees of this important bio-cultural heritage"

Saint Lucian Endemics

[*Acalypha elizabethiae*](#)
[*Bernardia laurentii*](#)
[*Chrysochlamys caribaea*](#)
[*Cuphea crudiana*](#)
[*Daphnopsis macrocarpa*](#)
[*Gonolobus iyanolensis*](#)
[*Lobelia santaluciae*](#)
[*Miconia luciana*](#)
[*Miconia secunda*](#)



Colour from the tree to spice on the table

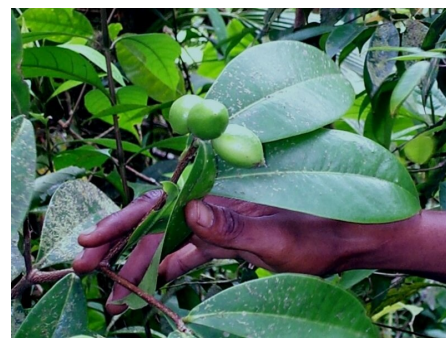
Image from Jomo's collection

These four (4) ethnic groups, living in our cultural veins, have contributed to and truly enriched and diversified our inherited resources in every aspect of our civilization. These groups have left us with a rich bio-cultural heritage, resulting in the Creole culture, including the Kwéyòl Language, our mother tongue. It is through the Kwéyòl Language that most of the traditional knowledge and customs are transmitted from generation to generation. This is especially true in the agro-heritage and more specifically in the 'Jaden Creole'. This is an alternative form of agriculture which was practiced on the periphery of the plantations by the enslaved and which has survived to this day. This practice is very relevant in today's context of climate change, food insecurity and climate smart agriculture.

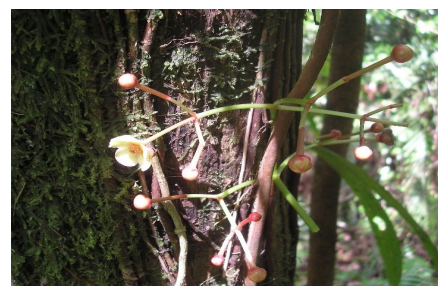
Cassava is considered the main 'climate smart', socio-economic crop which, for the original settlers, according to Higman, 2011, "Not only did cassava play a large role in the food security of the people, it also facilitated sedentary settlements in many new ecological niches, underpinned greater population density, and enabled the emergence of complex societies."

Furthermore, the traditional ways in which we use our plants in everyday life is for entertainment, enjoyment and most importantly for our survival. Our use of plants has been for the basic necessities of life - food, water, clothing, shelter, fire, medicine and hygiene, but also for other less essential purposes, such as, chairs, music, arts and craft, games, festivals, religion, cosmetics, ornamentals and so on. All of these practices or customs reflect our amalgamated lived experiences.

Each ethnic group left us specific customs; it is the blending and fusing of this traditional knowledge which has given rise to this unique Saint Lucian heritage. It is sometimes difficult to trace the roots from whence our customs sprang due to this fusion of cultures and adjustments made over time to fit our tropical circumstances and landscapes. In some cases, even experts on cultural studies have been baffled by the medley. Therefore, it is essential to conclude that the valley dwellers are the trustees of this important bio-cultural heritage, which still lives in their cultural veins within the local biosphere giving rise to the 'actual network of life' which they continue to shape, as it in turn continues to shape all.



An important endemic species as a source of fibre—*Daphnopsis macrocarpa*



Chrysochlamys caribae -endemic

Top and bottom images by Roger Graveson
<http://www.saintlucianplants.com/>

Plants of Bio-cultural value in St. Lucia

<i>Annona muricata</i> Linnaeus Kòsòl / Soursop. (Food and Medicine) nutraceutical
<i>Annona montana</i> Macfadyen Kachiman /Custard apple. (Food)
<i>Annona squamosa</i> Linnaeus Ponm kannél/ Sugar apple. (Food)
<i>Passiflora laurifolia</i> Linnaeus Ponm di lyenn (Food and basket making)
<i>Inga laurina</i> (Swartz) Willdenow Pwa dou. (Food and fuel)
<i>Inga ingoides</i> (Richard) Willdenow Kakoli. (Food and fire wood)
<i>Dacryodes excelsa</i> Vahl Gonmyé (Dugout canoe, resin for lighting fire)
<i>Croton micans</i> Swartz Ti bonm blan. Gwo bonm. (Brooms, Medicine)
<i>Tabebuia heterophylla</i> (de Candolle) Britton Pòwyé/ White Cedar (Timber, Ornamental, Arts and Crafts)
<i>Pimenta racemosa</i> (Miller) J. W. Moore Bwadenn/ Bay leaf. (Teas, Medicine, fuel, Timber) nutraceutical
<i>Calliandra tergemina</i> (Linnaeus) Bentham Bwa patat/ Bwa (lyenn) myan. (Fish Pots, Ornamental, hedges)
<i>Manilkara bidentata</i> (A. de Candolle) A. Chevalier Balata (Food and Timber)
<i>Quararibea turbinata</i> (Swartz) Poiret Bwa lélé/ Swizzlestick tree. (Traditional blender)
<i>Byrsonima spicata</i> (Cavanilles) de Candolle Bwa tan (si). (Food and fuel, Timber)
<i>Chrysochlamys argenteum</i> Jacquin Bwi/ Bwi kaymit. (Food, Fuel)

Society for Economic Botany Caribbean Chapter

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Formation of the Caribbean chapter of the Society for Economic Botany was conceptualized at the 50th annual meeting in Charleston, South Carolina, 2009. The theme of the conference was African Ethnobotany in the Americas and the wealth of activity presented on research being conducted in the Americas and the African diaspora reflected a need for an ethnobotanical base in the Caribbean region. The Caribbean chapter will function to collate research centered on the use of plants by peoples of the region. Knowledge sharing and exchange will be one of the great benefits as well as direct links to the international society and chapters.

The Commonwealth of Dominica—Volcanic and spiritually rich

The Commonwealth of Dominica is described as the 'Nature Isle' due to a vibrant conservation policy that has seen the island retaining large areas of virgin land. Dominicans have fought valiantly to maintain their natural heritage including the culture of the indigenous peoples, the Caribs, and the connection with the rich volcanic soil. Though challenged to be competitive in the Caribbean tourism market, in order to boost economic activity, they have been creative in working to draw the right kind of customer to their shores.

One cannot help but be captivated by the lush plant life, abundance of water attractions including waterfalls and hot springs, indigenous art and craft and the simple rugged beauty of the island. The Carib name for the island speaks of the natural treasure. 'Waitukubuli— Tall is her body' edifies striking grace.



Secret Bay Beach



Steps to the boiling lake (above); Hot spring (below). Images by Amina Emanuel

The Central Forest Reserve is the first reserve established on the island in 1952. This reserve is considered to be the main habitat for tree species used by indigenous peoples for making canoes and other tools. Some of these trees are members of the Burseraceae family. A further study of this heritage will be explored in the next issue of Plants and Heritage. (caribya.com/dominica)

