Journal of Ethnobiology 23(2): 167–185 Fall/Winter 2003

AFRICAN TRADITIONAL PLANT KNOWLEDGE IN THE CIRCUM-CARIBBEAN REGION

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ABSTRACT.—The African diaspora to the Americas was one of plants as well as people. European slavers provisioned their human cargoes with African and other Old World useful plants, which enabled their enslaved work force and free maroons to establish them in their gardens. Africans were additionally familiar with many Asian plants from earlier crop exchanges with the Indian subcontinent. Their efforts established these plants in the contemporary Caribbean plant corpus. The recognition of pantropical genera of value for food, medicine, and in the practice of syncretic religions also appears to have played an important role in survival, as they share similar uses among black populations in the Caribbean as well as tropical Africa. This paper, which focuses on the plants of the Old World tropics that became established with slavery in the Caribbean, seeks to illuminate the botanical legacy of Africans in the circum-Caribbean region.

Key words: African diaspora, Caribbean, ethnobotany, slaves, plant introductions.

RÉSUMÉ.—La diaspora africaine aux Amériques ne s'est pas limitée aux personnes, elle a également affecté les plantes. Les traiteurs d'esclaves ajoutaient à leur cargaison humaine des plantes exploitables d'Afrique et du vieux monde pour les faire cultiver dans leurs jardins par les esclaves ou les marrons libres. En outre les Africains connaissaient beaucoup de plantes d'Asie grâce à de précédents échanges de cultures avec le sous-continent indien. Grâce à leurs efforts, ces plantes occupent maintenant une place importante dans la flore des Caraïbes. La reconnaissance par les esclaves de plantes de genres pan-tropicaux ayant des valeurs nutritives, médicinales, et religieuses, semble également avoir joué un rôle important dans la survie des esclaves; les populations noires des Caraïbes et d'Afrique tropicale utilisent ces plantes de la même façon. Cette étude, consacrée aux plantes tropicales du vieux monde introduites aux Caraïbes par l'esclavage, a pour but de mettre en évidence l'héritage botanique des africains dans la région.

RESUMO.—A diáspora africana nas Américas constituiu-se de um processo de dispersão tanto de pessoas quanto de plantas. Juntamente com os carregamentos de escravos os exploradores europeus abasteciam suas naus transatlânticas com plantas originárias da África e do Velho Mundo; isto permitiu que tanto escravos quanto negros libertos as cultivassem em suas hortas e pomares. Os africanos tinham familiaridade, também, com muitas das espécies de plantas e especiarias utilizadas no fluxo de trocas comerciais e culturais com a Índia. A pertinácia e o ardil dos povos africanos contribuiriam para a inclusão destas plantas na botánica contemporânea do Caribe. O reconhecimento de espécies pantropicais de valor nutritivo, medicinal e religioso parece, também, ter desempenhado um papel importante na sobrevivência deste legado botânico. São exemplos disto as aplicações e usos de práticas culturais semelhantes, tanto no Caribe quanto na África Trop-

ical. O presente artigo, o qual focaliza as plantas dos trópicos do Velho Mundo que foram estabelecidas no Caribe pelas populações escravas, visa resgatar esta contribuição histórica dos povos africanos à região caribenha.

INTRODUCTION

One legacy of the Atlantic slave trade is the lingering failure to consider its victims as deliberate botanical agents. Yet the African diaspora was one of plants as well as people. European slavers relied upon African and other useful Old World plants to provision their ships, which provided the means for the arrival of these species in the Americas where they were grown by enslaved Africans and free maroons (Carney 2001b). On plantation subsistence fields and in their garden plots, New World Africans grew African plants valued for food, medicine, religious practices, cordage, and dyes. They also established plants of Asian origin that had long been used by African societies. Their botanical knowledge additionally extended to the recognition of pantropical genera, known for healing in Africa, which provided similar properties for treating illness in the Americas (Lowe et al. 2000:2).

The role of African plants and the ethnobotanical legacy of enslaved Africans is especially evident today in the Caribbean. More than forty percent of enslaved Africans over nearly four centuries of transatlantic slavery landed in the circum-Caribbean area, a higher percentage than anywhere else in the Americas (Curtin 1969:268). Foods of African origin serve as the culinary touchstone of the region, while native African species figure prominently in herbal pharmacopoeias. The early extermination of the Caribbean's native populations by epidemics and genocide did not result in irrevocable loss of Amerindian botanical acumen, as many neotropical endemics are found in contemporary folk medical traditions (Brussell 1997). New World Africans became the custodians of Amerindian botanical knowledge (Laguerre 1987:23). Plantation reliance upon forced migration of enslaved Africans delivered a steady infusion of African plant knowledge in the region, where two indigenous ethnobotanical systems met and hybridized through the conscious efforts of survivors.

Since the abolition of plantation slavery in the early nineteenth century, impoverished black majority populations of the Caribbean have relied upon the folk medical heritage their enslaved, maroon, and free black forebears passed on to them. Lack of access to safe and reliable health care by the poor has contributed to the persistence of folk pharmacopoeias and the use of plants to treat illness (Laguerre 1987). The *materia medica* of many rural Caribbean people continues to rely upon the roots, leaves, bark, fruits, and gum resins of diverse plants for healing. This alternative medicinal system is especially valued in contemporary Cuba. The collapse of the Soviet Bloc in 1989 placed the country's faltering economy in ever-deeper crisis, resulting in scarcity and rising costs of imported drugs. As a result, the government began promoting green medicine (*medicina verde*) for the treatment of non-life threatening ailments through a network of alternative pharmacopoeias (Carney fieldwork 1999). In dispensing herbs and roots to prepare decoctions long recognized for their healing properties, Cuba's *medicina verde*

pharmacies are drawing upon a medical tradition that New World Africans developed during the era of plantation slavery.

Because of its tangled cultural antecedents, the role of African plants and the agency of New World Africans in the development of Caribbean botanical resources remains understated in the literature (Lowe et al. 2000). The objective of this article is to draw attention to this heritage by focusing on the ethnobotanical knowledge that accompanied the African diaspora to the circum-Caribbean region. While the essence of the African botanical legacy is the experimentation and plant adoptions that accompanied forced migration, this article's focus on the African plants and ethnobotanical knowledge of New World Africans underscores the magnitude of their contribution.

Divided into three parts, the discussion begins with European perceptions of African plant knowledge during the era of transatlantic slavery. The discussion provides the context for illustrating the botanical knowledge of the Africans they enslaved. The next section identifies this plant heritage in the circum-Caribbean region. Included are plants native to tropical West Africa as well as Old World species whose presence in the Americas likely resulted from the efforts of New World Africans.[1] Plant genera of pantropical distribution serving identical purposes in Africa and the Caribbean are also noted, because it suggests a broader pattern of African botanical knowledge throughout a region that can be termed the Black Atlantic (Gilroy 1993). The third section draws attention to specific plants, their use in the African diaspora, and the role of New World Africans in their establishment.

HISTORICAL ACCOUNTS OF TRADITIONAL AFRICAN PLANT KNOWLEDGE

Most plant species used for food and medicine owe their broader distribution to introduction by human beings (Carney and Voeks 2003; Voeks 1997). One notable historical example of plant dispersal by people is known as the Columbian Exchange, which refers to the monumental diffusion of plant species that followed European maritime expansion from the fifteenth century (Alpern 1992; Crosby 1972). While the literature on the Columbian Exchange emphasizes the revolutionary role of Amerindian and Asian crop introductions by Europeans on other societies, there is little attention to African botanical transfers and the role of New World Africans in establishing the continent's native plants elsewhere (Carney 2001a, 2001b). The emergence of three centers of plant domestication in sub-Saharan Africa (two of them in tropical West Africa) added more than 115 endemic species to global food supplies, while laying the foundation for an ongoing process of experimentation and crop exchanges with other Old World societies (Harlan 1975; NRC 1996). Enslaved Africans and free maroons continued this process in the Caribbean.

African plants entered the Americas repeatedly over the 350-year period of the Atlantic slave trade, which delivered at least ten million persons into bondage (Curtin 1969). Arriving aboard slave ships as food and medicines, the plants were grown by New World Africans on plantation provision fields, dooryard gardens, and subsistence plots. In this manner, more than fifty species native to Africa

became part of circum-Caribbean botanical resources. An additional fourteen species, of Asian origin but grown in Africa since antiquity, also were established.

While the role of African crops in Atlantic history is reviewed elsewhere (Carney 2001b; Grimé 1979), there is as yet no systematic overview of the medicinal species of African origin that are widely used in Caribbean folk pharmacopoeias (but see McClure 1982). However, the dozens of compendia of herbal medicines now published for the Caribbean and tropical West Africa offer a point of departure for the study of African plant cures traditionally valued by Black Atlantic populations.

Along with China and India, west-central Africa represents one of the world's most developed ethnomedical traditions. European slavers repeatedly noted the skills of Africans in effecting cures with plants and the expertise of specific ethnic groups—such as the Fulani, Yoruba, Dahomean, and Ashanti—who were regarded as especially skilled with herbal medicines (Mouser 2002:85; Olmos and Paravisini-Gebert 2001:xviii–xix). Whites resident along the West African coast occasionally resorted to African healers to treat illness and fevers (Mouser 2002:53–54, 66, 85; Svalesen 2000:70–71, 75).

But paranoia also accompanied European perceptions of African plant skills. Resident European slave traders appear to have lived in constant fear of being poisoned by their mainland hosts. Jean Barbot, who made a slaving trip to the Guinea coast between 1678 and 1679, claimed that "poisoning is so common among the blacks and they are so skilful at it that there is much risk to whites" (Hair et al. 1992: I,129). Samuel Gamble, who captained a slave ship ca. 1793, added that merchants living in West Africa had adopted the practice of having servants taste food and never eating alone (Mouser 2002:67). Slaving illegally off the coast of Guinea in the 1820s and 1830s, Theodore Canot warned that the Mandingo were especially adept at food poisoning (Cowley 1928:83). Taking an African "wife" was thought to keep Europeans residing along the Guinea Coast from being poisoned, for if a man died mysteriously she could be charged with his death (Svalesen 2000:97). Despite such fears, captains of Portuguese slave ships often hired African healers as nurses and surgeons to treat the captives and to act as spies across the Middle Passage (Miller 1988:409).

The dual perception of African botanical skills was similarly present in plantation societies. Enslaved medical practitioners—variously referred to as "root doctors," "conjurers," nurses, and midwives—relied upon pharmacopoeias of roots and herbs and occasionally, spirit possession, to treat medical problems of physical and psychological origins (Laguerre 1987; Pollitzer 1999; Savitt 1978). Writing in the 1780s, Nicholas Bourgeois noted "the marvelous cures" found on the island of Saint Domingue (Haiti), observing that "the negroes are almost the only ones who know how to use them." He added that the "negroes and negresses who practice medicine . . . brought their treatments from their own countries" and "were more ingenious than we [Europeans] in procuring health . . ." even "the most dangerous [plant] poisons can be transformed into the most salubrious remedies when prepared by a skilled hand" (Schiebinger forthcoming). But the ethnomedical knowledge of New World Africans continued to arouse the suspicion of whites, who feared being poisoned by those they held in bondage (Aptheker 1970:192, 197–198, 241–242; Genovese 1972:224–225, 363; James 1963:

16–17). Planters viewed African traditional religions as exercises in black magic, witchcraft, or sorcery. They attributed several attempted slave revolts in the Caribbean to the use of poisons provided by practitioners of Afro-syncretic religions (Rashford 1984:67). The famed eighteenth-century Jamaican maroon leader, "Queen Nanny," reputedly used her mastery of medicinal herbs to kill soldiers sent to re-enslave fugitive blacks (Gottleib 2000:49). She was skilled in Nigerian obeah, which was widely practiced throughout the English-speaking Caribbean:

> During slavery days the practice of Obeah was rampant in all the West Indian Colonies, and laws were passed to put it down, and combat its baneful influence. There were few of the large estates which had not one or more Obeah men among their slaves. They were usually the oldest and most crafty of the blacks; those whose hoary heads and harsh and forbidding aspect, together with some skill in plants of the medicinal and poisonous species, and in the superstitious rites, which they brought with them from Guinea and Congo, qualified them for successful impositions on the weak and credulous. A great loss of slave property was caused by their poisonings through their use of poisonous roots and plants unknown to science, found in every tropical wood (Stark 1893:165).

In making the practice of "black magic" a criminal offense by 1760 (Lowe et al. 2000:3; Schiebinger forthcoming), the English and French plantation economies in the Caribbean recognized the potential of such practices for organizing resistance to enslavement. But the botanical knowledge of enslaved Africans was also suspect. It is now known that African floras contain a multitude of drug plants and alkaloid poisons (AEN 2000; Ayensu 1978; Oliver-Bever 1986). Many belong to pantropical genera with similar properties that were also endemic to the Caribbean.

Whether real or imagined, whites' fear of poisoning was such that they often turned to New World Africans for treatment of suspected cases. At times, this could lead to freedom, such as occurred with the "Negro Caesar," mentioned in the *South Carolina Gazette* (1750). Caesar's manumission in 1750 resulted from his reputed antidote for poisoning and for developing an herbal remedy for rattlesnake bite. This avenue to freedom in the U.S. South, however, was seldom offered to enslaved women. Their skills in botanical remedies remained so valued that they were retained as plantation nurses (Fett 2002:64).

Thus, in spite of their worries about plants being used for poisons, sorcery, or resistance, plantation owners continued to rely upon the ethnomedical knowledge of New World Africans to treat the illnesses of their enslaved workers. In their use of plants, African practices differed dramatically from those then favored by European slavers and plantation owners. Herbal treatments were often prepared from living plants, rather than the dried concoctions favored in white medicine (Pollitzer 1999:99). Vitamin-rich greens formed a central component of the diet of New World Africans, and roots and herbs made into infusions ("bush teas") remain to this day central to the traditional cures of the Caribbean (Ayensu 1981; Dean 1995). Tropical West Africa's rich tradition of using bush or herbal teas and greens for both food and medicine was undoubtedly the source of their continuing importance in the African diaspora. In West Africa, the leaves of at

least 150 species of plants are used as food, with 30 cultivated and some 100 gathered (Irvine 1952:32–34). These herbal cures stood in sharp contrast to the invasive treatments of venesection, cupping, blistering, purging, and leeching practiced by Europeans of the plantation slavery era. While such techniques have largely vanished, African herbal remedies endure to this day in the Caribbean folk healing system.

The survival of an African ethnomedical tradition results in part from its capacity to deliver both physical cures as well as psychological solace to New World Africans. Plants native to the Old World tropics and Africa played a direct role in healing diseases whose origins are attributed to a spiritual origin (Rashford 1984). Jamaica to this day memorializes the ethnomedical skills of New World Africans. "[M]ost of the herbs, barks, and roots" used in folk medicine "originally bore African names, which suggests the handing down of traditions from one generation to the next" (Barrrett 1976:68). Plants associated with obeah are named "John" or "Jumbie" and known as "duppy" plants, for their linkage to the world of spirits. These include the African native, "Duppy Cotton" (*Calotropis procera* (Ait.) Ait. f.), "John Crow Bead" (*Abrus precatorius*) of Old World tropical origin, the pantropical edible spinach "Duppy Calalu" (*Amaranthus spinosus*), and the silk cotton tree (*Ceiba pentandra*), where "duppies" live at its roots (Perkins 1969; Rashford 1984).

Species known in Africa figured in the pharmacopoeias that presumably induced trances or death-like states that mirrored the social death of slavery, epitomized by the "zombie" in Haiti. One notable botanical component is *Mucuna pruriens* (Davis 1983). While of Asian origin, its prominence in the "zombie" decoction suggests prior botanical familiarity with the plant in Africa. Besides Haitian voodou, African plants also figure importantly in the liturgical practices of other syncretic religions such as Brazilian candomblé, Cuban santería, and Jamaica myal, derived from Nigerian obeah (Brandon 1993; Lowe et al. 2000; Olmos and Paravisini-Gebert 2001:xviii; Voeks 1997). Plants of African origin used in Brazilian candomblé include *Garcinia kola*, *Aframomum melegueta*, and *Cola acuminata*, while *Newbouldia laevis* is known in Brazil only by its Nigerian Yoruba lexeme, *akokô* (Voeks 1997:29–31, 45).

AFRICAN TRADITIONAL PLANT KNOWLEDGE

It is often forgotten that the vanishing Amerindian population of the Caribbean was replaced with forced African migrants who originated in tropical societies. Research attention has yet to elucidate how New World Africans—the majority population in plantation societies—drew upon their knowledge of tropical botanical resources for food, healing, cultural identity, and survival. Slaves landing on Caribbean shores, however, would have recognized many of the plants they encountered. Some specimens floated across Atlantic currents independently of human agency; birds likely dispersed others. The inherent dispersal capabilities of maritime and air currents, for instance, are believed responsible for the introduction of the African bottle gourd (*Lagenaria siceraria*) and *Raphia taedigera* to the Neotropics and *Ceiba pentandra* of the Americas to Africa (Burkill 1985:281, 591; Otedoh 1977).[2] Other genera share a Caribbean and tropical West African bio-

geographical distribution (e.g., *Acacia, Dacroydes, Dorstenia, Quassia, Strychnos*), indicative of their pantropical origin (Thorne 1972). The anthropologist Brent Berlin (1992) observes that folk societies across the world recognize taxa with desirable properties at the level of genus, even if they do not always distinguish among species. That foundation in tropical botanical knowledge provided Africans forcibly relocated to the Caribbean the critical knowledge for shaping Afro-Caribbean plant resources.

The plants used by New World Africans that reveal an African legacy are identified in Table 1. One hundred and twenty-five genera and species are included, representing fifty-two botanical families. Nineteen genera from fifteen families occur in both Africa and Latin America and are believed to share a common origin in West Gondwana prior to continental separation (Gentry 1993: 512). The table draws upon the species lists of more than three dozen sources to indicate whether the plant was used nutritionally, medically, or culturally (e.g., religious practices, construction, dyeing, fiber), as well as geographical origin.

Of the 91 species listed, 52 are native to Africa. The remaining 39 include some plants of Old World (chiefly Asian) origin that were already present in Africa prior to transatlantic slavery, thereby illuminating the significance of African knowledge for their establishment in the Americas.

One cultivated medicinal of Caribbean origin, *Spondias mombin*, also appears on the list for its centrality in African medicinal plant use and uncertainty as to whether it is also indigenous to West Africa (Burkill 1985:92). Nearly two dozen plants listed in Table 1 belong to genera of pantropical distribution; however, they too bring attention to the role of New World Africans, since the genera are used for identical medicinal purposes in the Antilles and tropical West Africa. Over the 350-year period of plantation slavery, the human population flow across the Atlantic went chiefly from Africa to the Caribbean. If Amerindians independently knew the medicinal value of these taxa, the persistence of such plants to this day in the Caribbean pharmacopoeia ultimately depended upon transmission by New World Africans, as the Amerindian population ceased to exist in most Caribbean plantation societies by the eighteenth century (Crosby 1972; Watts 1987).

To clarify African agency and ethnobotanical knowledge, plant species endemic to the New World, and probably originally used by Amerindians, have mostly been excluded from the table. Neotropical plants naturally dispersed (by wind, ocean currents, or birds) to Africa in antiquity and widely used by Africans prior to the Atlantic slave trade, however, are included. Some African plants floated across the Atlantic on their own and were already established in the Caribbean before the arrival of enslaved Africans. But most of the plants listed in Table 1 depended upon deliberate introduction and the arrival of those familiar with their properties.

NEW WORLD AFRICANS AS ACTIVE FLORISTIC AGENTS

Carried aboard slave ships, African plants contributed to survival, health, and economy in the Caribbean. The journey across the Middle Passage introduced African grasses (*Panicum maximum, Brachiaria mutica*), possibly for bedding but certainly as fodder for cattle (Parry 1955; Parsons 1972). James Barbot's slaving

TABLE 1.—Plants used by New World Africans that have analogous uses in the circum-Caribbean region and tropical West Africa.

Taxon	Geographical origin†,¶	Use§	References¶
Amaranthaceae			
Amaranthus dubius Mart. et Thell.	NW	F, M	5, 7, 8, 15
A. hybridus L. sp. *hybridus/A. viridis* L.	Afr	F, M	5, 8, 20
A. spinosus L.	PT	F, M	1, 4, 5, 8, 11, 21, 26, 32
Amaryllidaceae			
Crinum zeylanicum (L.) L.	Afr	M	5, 8
Anacardiaceae			
Spondias mombin L.	NW	B, M	1, 2, 7, 8, 15, 16, 17, 32
Annonaceae			
Annona glabra L.	PT	M	5, 8, 21
Monodora myristica Blanco	Afr	B, F, M	8, 14
Apocynaceae			
Nerium oleander L.	Med	M, P	1, 2, 5, 7, 8, 15, 18, 22, 32
Rauwolfia serpentina (L.) Benth. ex Kurz	PT	B, D, M	8, 22, 32
R. vomitoria Afzel.	Afr	M, P	1, 3, 8, 22, 32
Rauwolfia spp.	OW	M, P	5, 8, 34
Tabernaemontana spp.	PT	M	2, 4, 8, 15, 32
Araliaceae			
Polyscias guilfoylei (W. Bull) L.H. Bailey	OW	M	5, 8
Asteraceae			
Ambrosia spp.	PT	M	5, 8
Artemisia spp.	PT	M	1, 5, 8, 32
Eclipta alba (L.) Hassk.	PT	M	1, 2, 5, 8, 22, 32
Emilia coccinea (Sims) G. Don	OW	F, M	4, 5, 7, 8
Senecio spp.	Afr	M	5, 8
Vernonia spp.	PT	F, M	2, 5, 7, 8, 19, 20, 22, 32
Begoniaceae			
Begonia spp.	PT	M	5, 8, 15
Bignoniaceae			
Newbouldia laevis (P. Beauv.) Seem. ex Bureau	Afr	M, R	8, 35
Bombacaceae			
Adansonia digitata L.	Afr	Fb, F, M	1, 5, 8, 20, 22, 29, 32
Ceiba pentandra (L.) Gaertn.	NW	B, F, Fb, M	1, 2, 3, 5, 7, 8, 21, 22, 32
Boraginaceae			
Cordia spp.	PT	B, F, M	1, 2, 15, 20, 32
Heliotropium indicum L.	Afr	M	1, 2, 5, 8, 32, 36

TABLE 1—(continued)

Taxon	Geographical origin†,¶	Use§	References¶
Brassicaceae			
Brassica integrifolia (H. West) Rupr.	Afr	F	20
B. oleracea L.	OW	F	20
Brassica spp.	OW	F	20
Burseraceae			
Dacryodes spp.	PT	M	5, 8, 15
Cannabaceae			
Cannabis sativa L.	OW	M	5, 8, 12, 15, 18, 22, 23
Caryophyllaceae			
Drymaria cordata (L.) Willd. ex Schult.	PT	M	5, 8, 32
Celastraceae			
Maytenus spp.	OW	M	3, 4, 5
Clusiaceae			
Garcinia kola Heckel	Afr	R	35
Combretaceae			
Conocarpus erectus L.	PT	M	2, 5, 8
Commelinaceae			
Commelina diffusa Burm. f.	PT	F, M	4, 5, 7, 8, 20
Convolvulaceae			
Argyreia spp.	PT	M	5, 8
Evolvulus spp.	PT	M	5, 8, 32
Crassulaceae			
Bryophyllum pinnatum (L. f.) Oken	Afr	M	5, 8, 22
Kalanchoe integra (Medik.) Kuntze	Afr	M, R	8, 21, 35
Cucurbitaceae			
Citrullus lanatus (Thunb.) Matsum. & Nakai	Afr	F, M	5, 8, 18
Cucumis sativus L.	OW	F, M	5, 8, 12, 18
Lagenaria siceraria (Molina) Standl.	Afr	M, R	2, 8, 21, 32
Luffa cylindrica M. Roem.	unkn	Fb	7, 8
Momordica charantia L.	Afr	F, M	1, 2, 5, 7, 8, 9, 15, 16, 17, 18, 20, 21, 22, 23, 32, 34
Cyperaceae			
Cladium mariscus (L.) Pohl	PT	M	5, 8, 36
Cyperus articulatus L.	PT	M	5, 8
C. rotundus L.	PT	M, R	5, 8, 35
Dioscoreaceae			
Dioscorea cayenensis Lam.	Afr	F, M	5, 8, 12, 14, 22
D. rotundata Poir.	Afr	F, M	5, 8

TABLE 1—(continued)

Taxon	Geographical origin†,¶	Use§	References¶
Euphorbiaceae			
Acalypha spp.	OW	M	5, 8
Alchornea spp.	PT	M	4, 5, 8
Croton lobatus L.	OW	M	1, 5, 8, 32
Croton spp.	PT	M	5, 7, 8
Euphorbia hirta L.	OW	M	4, 5, 8, 22
E. hyssopifolia L.	Afr	M	5, 8
E. thymifolia L.	PT	M	5, 8, 22
E. tirucalli L.	Afr	M, P	5, 7, 8, 21, 22
Phyllanthus amarus Thonn.	Afr	M	4, 5, 8, 18
Phyllanthus spp.	OW	F, M	2, 5, 7, 15, 22
Ricinus communis L.	Afr	M, P	1, 2, 5, 7, 8, 15, 17, 18, 19, 22, 30, 32, 35, 36
Fabaceae—Caesalpinioideae			
Bauhinia spp.	OW	M	5, 8
Caesalpinia bonduc (L.) Roxb.	PT	M, P	5, 7, 8, 21
Tamarindus indica L.	Afr	F, M	1, 2, 5, 7, 8, 17, 18, 32
Fabaceae—Mimosoideae			
Acacia spp.	PT	B, Fb, M, P	5, 7, 8, 19
Fabaceae—Papilionoideae			
Abrus precatorius L.	OW	M, R	1, 2, 4, 5, 7, 8, 18, 22, 30, 32
Cajanus cajan (L.) Millsp.	Afr	F, M	7, 8, 18
Crotalaria incana L.	Afr	M	5, 8
Crotalaria spp.	OW	M	5, 8
Derris spp.	OW	M	5, 8, 22
Desmodium adscendens (Sw.) DC.	Afr	M	5, 8
D. incanum (Sw.) DC.	PT	M	5, 8, 34
D. triflorum (L.) DC.	PT	M	5, 8, 36
Indigofera spp.	PT	D	5, 7, 8
Lablab purpureus (L.) Sweet	Afr	D, F, M, P	5, 8
Mucuna pruriens (L.) DC.	OW	F, M	1, 2, 8, 10, 20, 32
Vigna subterranea (L.) Verdc.	Afr	D, Fb, F, M, P	8, 28
V. unguiculata (L.) Walp.	Afr	F, M	8, 20
Flacourtiaceae			
Oncoba spp.	Afr	m	5, 8, 22
Lamiaceae			
Hyptis spp.	PT	M	5, 8, 16, 18, 19, 22
Leonotis nepetifolia (L.) R. Br.	Afr	M	1, 5, 7, 8, 15, 18, 21, 32, 34
Ocimum basilicum L.	PT	F, M	1, 2, 4, 5, 8, 15, 22, 32
O. gratissimum L.	Afr	M	1, 4, 5, 8, 18, 22, 32
Lauraceae			
Cassytha filiformis L.	Afr	M	5, 7, 8, 21

TABLE 1—(continued)

Taxon	Geographical origin†,¶	Use§	References¶
Loganiaceae			
Strychnos spp.	PT	P	3, 8, 23, 24, 35
Malvaceae			
Abelmoschus esculentus (L.) Moench.	Afr	F, M	2, 5, 8, 20, 32
Hibiscus sabdariffa L.	Afr	Fb, F, M	5, 7, 8, 20, 21
Hibiscus spp.	OW	Fb, F, M	5, 8, 17
Sida acuta Burm. f.	PT	M	5, 8, 15
S. urens L.	PT	M	5, 8
Urena lobata L.	PT	M	5, 8, 15, 20
Meliaceae			
Carapa spp.	PT	M	5, 8, 22
Menispermaceae			
Cissampelos spp.	OW	M	4, 5, 8, 18, 19, 34
Moraceae			
Dorstenia spp.	Afr	M	5, 8
Moringaceae			
Moringa oleifera Lam.	OW	F, M	3, 5, 7, 8, 18, 19, 20
Nyctaginaceae			
Boerhavia diffusa L.	PT	M	5, 8, 15, 22
Ochnaceae			
Sauvagesia erecta L.	unkn	M	5, 8, 15, 21
Oxalidaceae			
Oxalis corniculata L.	PT	M	5, 8, 21
Pedaliaceae			
Sesamum alatum Thonn.	Afr	F	8, 12, 16
S. radiatum Schum. & Thonn.	Afr	F, M, R	8, 12
Piperaceae			
Peperomia pellucida (L.) Kunth	PT	M	5, 8, 15, 18, 20, 21, 32
Plumbaginaceae			
Plumbago capensis Thunb.	Afr	M	5, 8, 15
Poaceae			
Andropogon spp.	OW	M	5, 8, 17
Brachiaria mutica (Forssk.) Stapf	Afr	Fr	25
Cynodon dactylon (L.) Pers.	Afr	M	5, 7, 8, 36
Eleusine indica (L.) Gaertn.	Afr	F, M	5, 7, 8, 15
Oryza glaberrima Steud.	Afr	F, M	8, 27
Panicum maximum Jacq.	Afr	Fr, M	5, 8, 15, 18, 25
Pennisetum glaucum (L.) R. Br.	Afr	Fr, F	8, 9
P. purpureum Schumach.	Afr	Fr, F, M, R	8, 13
Sorghum bicolor Kuntze	Afr	Fr, F	8, 14
Vetiveria zizanioides (L.) Nash	OW	Fb, M	5, 7, 8

TABLE 1—(continued)

Taxon	Geographical origin†,¶	Use§	References¶
Rhizophoraceae			
Rhizophora mangle L.	PT	B, M	5, 8, 21
Rubiaceae			
Coffea arabica L.	Afr	F, M	1, 2, 5, 8, 32
C. liberica W. Bull ex Hiern	Afr	F, M	5, 8
Oldenlandia corymbosa L.	Afr	M	5, 8
Rutaceae			
Zanthoxylum spp.	unkn	D, M	5, 7, 8
Sapidaceae			
Blighia sapida K.D. Koenig	Afr	F, M, P	1, 4, 5, 7, 8, 30, 31, 32, 37
Cardiospermum halicacabum L.	Afr	M	1, 2, 5, 8, 15, 32
Simaroubaceae			
Quassia spp.	PT	M	2, 5, 8, 9, 22
Sterculiaceae			
Cola acuminata (P. Beauv.) Schott & Endl.	Afr	F, M, R	4, 5, 6, 8, 19, 21, 23, 35
C. nitida (Vent.) Schott & Endl.	Afr	F, M	1, 32
Waltheria indica L.	PT	M	4, 5, 8, 15, 21, 34
Tiliaceae			
Corchorus spp.	OW	Fb, F, M	5, 8, 20, 23, 34
Triumfetta spp.	PT	M	5, 8
Zingiberaceae			
Aframomum melegueta K. Schum.	Afr	F, M, R	3, 5, 8, 14, 19, 35

† Afr = Africa; Med = Mediterranean basin; NW = New World; OW = Old World; PT = Pantropical; unkn = unknown origin.
§ B = Building; D = Dye; Fb = Fiber; Fr = Forage; F = Food; M = Medicine; P = Poison; R = Ritual.
¶ Books consulted, References.
Books Consulted for Geographical Origin of Plants: Burkill 1985–2000; Hickman 1993; Hutchinson and Dalziel 1954; Huxley 1992.
References: 1–Abbiw 1990; 2–Aces 1939; 3–AEN 2000; 4–Ayensu 1978; 5–Ayensu 1981; 6–Brandon 1993; 7–Brussell 1997; 8–Burkill 1985–2000; 9–Coe and Anderson 1996; 10–Davis 1983; 11–Dean 1995; 12–Grimé 1979; 13–Hair et al. 1992; 14–Hall 1991; 15–Honeychurch 1980; 16–Irvine 1952; 17–Jordan 1986; 18–Lowe et al. 2000; 19–Madge 1998; 20–Martin et al. 1998; 21–Mors et al. 2000; 22–Oliver-Bever 1986; 23–Olmos and Paravisini-Gebert 2001; 24–Otedoh 1977; 25–Parsons 1972; 26–Perkins 1969; 27–Portères 1955; 1960; 28–Price 1991; 29–Rashford 1987; 30–Rashford 1993; 31–Rashford 2001; 32–Roig 1991–1992; 33–Schery 1965; 34–Thomas et al. 1997; 35–Voeks 1997; 36–Wanderlin 1998; 37–Warner-Lewis 1991.

voyage along the Guinea Coast in 1699–1700 commended the Portuguese for using coarse, thick mats as bedding on slave ships, which were changed every few weeks (quoted in Dow 1927:82). Guinea grass (*Panicum maximum*) was reported in Barbados in 1684 and introduced to Jamaica in 1745, where it "gave a great impetus to cattle raising" (Parry 1955:11). Many crops provisioned the enslaved aboard slave ships, providing the means for New World Africans to establish them in plantation subsistence fields and their dooryard gardens. These included African rice (*Oryza glaberrima*), yams (*Dioscorea cayensis, D. rotundata*), cow [black-

eyed] peas (*Vigna unguiculata*), pigeon [congo] peas (*Cajanus cajan*), melegueta peppers (*Aframomum melegueta*), palm oil (*Elaeis guineensis*), sorrel/roselle (*Hibiscus sabdariffa*), okra (*Abelmoschus esculentus*), sorghum (*Sorghum bicolor*), millet (*Pennisetum glaucum, Eleusine coracana*), and the Bambara groundnut (*Vigna subterranea*) (Berleant-Schiller and Pulsipher 1986; Carney 2001b; Chaplin 1993; Fredrich 1976; Parry 1955; Pollitzer 1999; Price 1991; Pulsipher 1994; Wilson 1964).

One African plant, the castor bean (*Ricinus communis*), was used for lamp oil, medicine, and even as a hair tonic (Fredrich 1976:192). Prominent African medicinal plants introduced during the era of transatlantic slavery include *Momordica charantia, Kalanchoe integra, Phyllanthus amarus, Leonotis nepetifolia, Cola acuminata* and *Corchorus* spp. (Burkill 1985:558; 1994:119; 1995:14–15; Price 1991; du Toit 2001:21). The curative value of *Kalanchoe* is reflected in its common names, "long-life" and "never-die," while "maiden apple" or the "African cucumber" (*Momordica charantia*) ranks as the single most important medicinal of African origin in the Black Atlantic. It is used as an aphrodisiac as well as an abortifacient, to treat snakebite, pain, high blood pressure and as an anti-inflammatory for rheumatism and arthritis (Lowe et al. 2000:123). Another Old World plant esteemed for healing among populations of the African diaspora is *Abrus precatorius*, a venerable South Asian ayurvedic medicine that had already diffused to the African subcontinent from India long before the onset of the transatlantic slave trade. Used as a febrifuge and expectorant by Caribbean diasporic populations, *A. precatorius* remains an esteemed herbal remedy throughout the Black Atlantic (Ayensu 1978, 1981; Coe and Anderson 1996; McClure 1982).

Other plants of African origin established in the Caribbean *materia medica* are wrongly attributed an Asian origin, thereby obscuring the African floristic contribution to regional folk pharmacopoeias. Tropical Old World plants formed part of an ancient history of exchanges between Africa and Asia (notably, with India and China). Tamarind (*Tamarindus indica*), castor bean (*Ricinus communis*), and okra (*Abelmoschus esculentus*), for example, provide examples of crops that originated in Africa and diffused to Asia between one and three thousand years ago (Alpern 1992; Harlan 1975; Küster 2000:431–437; Vaughan and Geissler 1999). Other African domesticates, such as sorghum (*Sorghum bicolor*) and millets (*Pennisetum glaucum, Eleusine coracana*), became the subjects of intense plant breeding in India thousands of years ago before returning again to Africa as new varieties (NRC 1996:189; Vaughan and Geissler 1999:10; Watson 1983: 9–11).

Still other plants of Old World origin were long established in Africa prior to their dissemination across the Atlantic by slave ships. These include mustard greens and kale, introduced from the Mediterranean, and sesame, originally of Asian origin but so long used in Africa that it bears the name, benne, which became the plant's name in the U.S. South (Bedigian 2000:418–419; Irvine 1952; Zohary and Hopf 2000:140–141). Plant exchanges between India and Africa by maritime and overland routes had been underway for millennia before Europeans began enslaving Africans in the fifteenth century (Alpern 1992; Harlan 1975; McClure 1982). Taro (*Colocasia esculenta*), lime (*Citrus aurantifolia*), the luffa sponge (*Luffa* spp.), an edible green (*Celosia argentea*), and banana and plantain (*Musa* spp.) offer examples of Asian crops that diffused to Africa in prehistory (Alpern 1992;

Burkill 1985:53–55; McNeill 2000; Russell-Wood 1998:148–182; Vaughan and Geissler 1999; Watson 1983).

Marijuana (*Cannabis sativa*) provides yet another example of a plant of Asian origin that likely arrived in the American tropics via Africa. While marijuana is of ancient Asian origin, it followed two divergent paths of co-evolution with human beings in prehistory. Its movement west from ancient China into northern Europe involved the plant's selection for cordage, especially the strength and length of the fibers, a use for which it would become known as hemp. Along another path of diffusion—from central Asia, into India and onward to Africa—cannabis was selected for its medicinal properties. It is believed to have entered the Americas as a medicinal on slave ships (Pollan 2001:157).

The nineteenth-century Brazilian name for Asian soybeans, "Angola peanuts," also suggests a transcontinental transfer via Africa as does the initial name given to eggplant in the U.S. South, "Guinea squash" (Dean 1995:127).[3] Despite the significance of plant transfers between Africa and Asia in the millennia prior to European maritime expansion, emphasis remains on the Columbian Exchange and the role of Europeans in transcontinental dispersion. Following McNeill (2000), this earlier, and ancient, period of plant transfers between two parts of the world that were subsequently enslaved and/or colonized by Europeans could be termed the "Monsoon Exchange" (Russell-Wood 1998:33–40).

Among the medicinals of tropical Asian origin listed in Table 1, *Mucuna pruriens* has long been valued in the Black Atlantic. It traditionally served as an aphrodisiac, as a substitute for coffee, as a cure for syphilis, and as a component of the concoction said to produce the Haitian "zombie" (Davis 1983:89; Fredrich 1976:61). The significance of many Asian medicinals in Afro-Caribbean folk medicine began with their previously established value to Africans long before the wave of Asian and Chinese immigration to the Caribbean that dates to the nineteenth century.

With the exception of the coffee plant and the oil palm, Europeans were not much interested in plants of African origin (Chaplin 1993:156). While these two valued tree species would become plantation crops in the Caribbean, most plants indigenous to Africa depended upon New World Africans for their establishment, as whites did not consume them. African domesticates that became important in Caribbean cuisines include the ackee apple (*Blighia sapida*), which is cooked with salted fish in Jamaica; wild spinach or pigweed (*Amaranthus hybridus, Amaranthus* spp.) that gives calalou, the region's popular "pepper pot" soup, its distinctive flavor along with bitter leaf (*Vernonia* spp.) and *Brassica* spp., the "greens" favored in diaspora dishes. Other African introductions include the baobab (*Adansonia digitata*), whose fruits are still consumed in St. Croix, and the kola nut (*Cola acuminata, C. nitida*), a non-alcoholic stimulant with medicinal properties that was especially valued by Muslim slaves (Ayensu 1981; Rashford 1987, 1993, 2001). The kola nut was also used to make a refreshing beverage, which Barbot described in late seventeenth-century West Africa:

> There is also a fruit called 'cola' and by others, 'cocters', which quenches the thirst and makes water delicious to those who make use of it. It is a kind of chestnut, with a bitter taste. The blacks assured me that they did

> great trade with these in the upper parts of their country, where they sold them to people who are almost white, who come there expressly at certain times (apparently these are Egyptians or Moroccans). Here is a drawing, showing it both whole and cut open down the middle. I give it natural size. The outside is red mixed with blue and the inside violet and brown. (quoted in Hair et al. 1992:I, 188).

Fieldwork suggests the nut may have been similarly used in the Americas; in Belize today it is prepared as a beverage by New World Africans.[4] An ingredient of medicinal tonics in the southern U.S. during the nineteenth century, kola nut would join the coca leaf in the making of the world's most famous beverage, Coca-Cola (Pendergrast 1993). Perhaps no other concoction better celebrates the marriage of the Amerindian and African ethnobotanical heritage of the Americas.[5]

New World Africans also recognized genera whose attributes were known in Africa. The genus *Strychnos*, for instance, served as a poison throughout the Black Atlantic. *Rauwolfia* spp., which act as tranquilizers, were commonly used in Africa as well as by diasporic populations in the Caribbean. *Euphorbia* spp., which provided relief from colds, indigestion, and pain, are found in traditional pharmacopoeias of both areas. Another genus, *Quassia*, is the source of a valued febrifuge in the tropical Black Atlantic. This is the only genus that specifically recognizes the plant contribution of a New World African to the Americas. It is named after Quassi, a slave, healer, and "sorcerer," who was carried off from West Africa to Suriname, and became famous for promoting the plant's curative properties around 1730 (Grimé 1979; Stedman 1963 [1777]). When a specimen of the plant was brought to the attention of Linnaeus in 1761, he named the genus after Quassi, thereby immortalizing the contribution. The use of the genus as a febrifuge continues to this day in eastern Nicaragua by the Gar'funa, descendants of New World Africans and Carib Indians (Coe and Anderson 1996:75).

CONCLUSIONS

While recent decades have advanced our understanding of the Amerindian contribution to New World botanical resources, the African plant heritage remains obscured (Carney and Voeks 2003). In botanical knowledge and agricultural domestication, African accomplishments were every bit as advanced as those of Amerindians and Asians, whose contributions are celebrated as part of the Columbian Exchange. This article's examination of the plants of the African diaspora shifts the focus from the European role in intercontinental plant exchanges to that of New World Africans in the circum-Caribbean where they remain the majority population.

The plant exchanges, botanical gardens, and scientific societies that accompanied the European Enlightenment drew upon the botanical resources of those they colonized and enslaved while privileging European agency. Yet in subsistence fields, gardens, and forested tracts of plantation economies, New World Africans and their descendants were engaged in a parallel paths of botanical experimentation and plant exchange that were equally profound. They established favorite species of African origin as well as those from other parts of the Old

World long appreciated in African societies. Their efforts safeguarded for posterity some of the botanical accomplishments of Amerindians as they vanished from Caribbean islands. In promoting survival, cultural identity, spiritual succor, and resistance, the ethnobotanical knowledge of New World Africans laid the foundation for the rich traditional healing system still practiced in the Caribbean to this day. This article offers a preliminary effort towards the recovery of their ethnobotanical legacy.

NOTES

[1] Following Burkill (1985) and Oliver-Bever (1986), tropical West Africa refers to the region from Senegal south along the coast to Cameroon and inland to Chad.

[2] *Raphia taedigera* is the only New World example of a large African genus that is likely related to *R. vinifera* in West Africa (Otedoh 1977). It occupies a disjunct Neotropical distribution from eastern Nicaragua south to the Amazon estuary (Carney and Hiraoka 1997). Recent palynological research establishes its presence in eastern Nicaragua about two thousand years ago, supporting the likelihood that the pine cone-shaped fruits floated across the Atlantic independently of human introduction (Urquhart 1997). However, the African hornbill disperses *R. vinifera* in Cameroun (Tom Smith, Professor of Biology, University of California, Los Angeles, in a conversation, October 5, 2003)

[3] see also Karen Hess, unpublished manuscript, "Mr. Jefferson's Table: the Culinary Legacy of Monticello" (n.d.).

[4] T.H. Culhane, University of California, Los Angeles, personal communication.

[5] This insight was offered by doctoral student T.H. Culhane, conversation, January 24, 2001.

ACKNOWLEDGMENTS

The author would like to acknowledge the invaluable assistance of Richard Rosomoff, Lisa Chaudhari, Emerio Morejón, Tom Gillespie, Barry Prigge, and T.H. Culhane in the manuscript's preparation. This article benefited a great deal from the engaging comments and thoughtful suggestions provided by the journal's editor and anonymous reviewers. The author, however, assumes sole responsibility for the argument advanced and the interpretation of the plants listed in Table 1. Fieldwork for this project was funded by a grant from the Latin American Studies Center at the University of California, Los Angeles.

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