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Cover Photo: Dr. Lynn Margulis, Symposium Keynote Speaker, describes the structure and ecology of living stromatolites. Some, visible as grayish mounds near her feet, line the shore of Storrs Lake whereas others occur farther out in deep water. (See paper by D. C. Edwards, this volume).

Back Cover Photo: Group photo of the 6th Symposium participants and speakers.

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MEDICINAL PLANTS OF ANDROS ISLAND, BAHAMAS: A CROSS CULTURAL STUDY

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ABSTRACT

Andros Island, the largest Bahamian island, is just 35 miles from Nassau, yet is considered an "Out Island." It is sparsely populated, and isolated by rocky shores and a barrier reef. Androsians share a diverse cultural background resulting from immigration from Africa, Britain, the United States (including Seminoles), and the Caribbean. However, most Androsians are of African origin, and Andros has often been cited as a refuge of African traditions within the Bahamas. Evidence of all of these cultural influences is present.

Androsians have long relied upon the island's natural resources to meet their daily needs, and have developed an extensive pharmacopeia, usually termed "Bush Medicine," which modernization threatens to undermine. This paper documents and preserves part of that knowledge base.

INTRODUCTION

The wealth of the traditional knowledge of the world's peoples has until recently been overlooked, suppressed, or grudgingly tolerated; yet this information is the foundation of modern medicine and remains the basis of survival for much of the world's population (Lewis and Elvin-Lewis, 1977). This knowledge is increasingly threatened by habitat destruction (Iwu, 1993), war, colonialism, genocide, and the forced acculturation of the world's traditional peoples (Ramanohisoa, 1983). This paper documents, in part, the traditional medical practices and cultural origins of the inhabitants of the northern Andros Island.

Bahamians have a rich tradition of using natural resources to meet their needs. Each island is unique for its individual characteristics (Saunders, 1990); however,

recently communication and transportation has become much easier, and many Bahamians are migrating to larger cities (Sealey, 1990). Most Bahamians know part of their ethnobiological heritage, but much is being lost (McClure, 1981).

Andros Island is the largest island in the Bahamas (Craton, 1962): about 1600 square miles (Northrop, 1902; McClure, 1981, 1986). It is on the western edge of the Bahama Archipelago, just 35 miles west of New Providence. In spite of this proximity to the capital, it is still considered an "Out Island" or "Family Island", with few outsiders visiting (McClure, 1981). Andros' isolation has been enhanced by the rocky eastern shore (Northrop, 1902), barrier reef, and inhospitable west coast. As on similar "Out Islands" (Higgs, 1974), this isolation has led to reliance upon local resources, including traditional "bush medicine" (McClure, 1981, 1986; Correll and Correll, 1982). Previous ethnobiological research on Andros is limited to a few (12) taxa used as aphrodisiacs (McClure, 1981, 1986; McClure and Eshbaugh, 1983).

Andros is now easily reached and has convenient lodging and research facilities. Because of its size, Andros exhibits greater botanical diversity than any other island: several categories of hardwood coppices (Smith and Vankat, 1992; Smith, 1991); pineyard; scrub; salt water marsh; rocky and sandy beaches; palm savannas; and mangroves (Correll and Correll, 1982; Eiten, 1986; Nickrent et al., 1991).

Andros has a unique cultural heritage. The first Androsians, the Lucayans (Bregenzer, 1982, Riley and Lowe, 1991) or Siboneys (Barry, 1973; Craton, 1962; Saunders, 1988), were wiped out by the Spanish in the early 1500's (Riley and Lowe, 1991) when as many as 40,000 - 50,000 Amerindians were taken from the Bahamas as slaves or died from

introduced diseases (Aarons, 1990; Bregenzer, 1982; Byrne, 1980; Cash et al., 1991; Fernández de Oveido, 1526 Granberry, 1980; Riley and Lowe, 1991; Sealey, 1985; Rouse, 1992; Stark, 1891). Andros remained uninhabited until 1787, when 1400 immigrants (British Loyalists and their households, including slaves) arrived from the British colony of San Andreas, off the Mosquito coast (Saunders, 1988, 1990). Andros' slaves came primarily from coastal west Africa (Davidson et al., 1966; Newbury, 1961; Raboteau, 1978). Slaves arriving in the Bahamas, were culturally, ethnically and linguistically mixed (Powles, 1888; Stark, 1891) to ensure that they were unable to organize among themselves (Raboteau, 1978). Bahamian slaves were given greater liberty than Caribbean slaves, allowing maintenance of a semblance of African tribal affiliation, which outlasted the slave period. In the late 1800's some New Providence settlements followed African tribal and language lines, and maintained African customs (Powles, 1888; Saunders, 1990; Stark, 1891). Slave immigration continued until the Emancipation Act of 1834 (Byrne, 1980), when many white Bahamians, especially those from the Abacos (LaFlamme, 1985), emigrated to the Florida Keys (Cox, 1983). Emancipation did not mark the end of African immigration to the Bahamas. It continued through the raiding of slave ships by Bahamian mariners. These post-Emancipation African immigrants entered into a system of apprenticeship or indentured servitude, which continued until the beginning of the twentieth century (Cash et al., 1991; Saunders, 1990). Upon the termination of these contracts, many of these African-born inhabitants moved to the "Out Islands" (Cash et al., 1991). As a result of the many years of African immigration, most (85%) Bahamians are of African origin (Aljouny, 1992; Saunders, 1980, 1988).

Andros, which received many of these African-born freed slaves (Cash et al., 1991; Saunders, 1990), maintained its African legacy more strongly than other islands (Barry, 1973; Cash et al., 1991; LaFlamme, 1985; Saunders, 1990). Examples of African heritage can be seen today in Androsian folktales and stories (Christie, 1988; Parsons, 1918), and in remnants of an African religious system called "Obeah" (Christie, 1988).

Andros has also been influenced by Seminole and Black Seminole immigration. In 1821, Seminoles and Black Seminoles (escaped slaves allied with the Seminoles) fled to the Bahamas. The wrecking vessel "Steerwater" brought some of them to the western edge of Andros, where they established the settlement still known as Red Bays (Goggin, 1946; Porter, 1951; Logan, 1969; Milloy, 1974; Smith, 1977; Smith and Kerr, 1977; Newton, 1991; Wood, 1980). They prospered in isolation until the hurricane of 1866, then eventually mixed with other islanders moving throughout North Andros (Newton, 1991; Wood, 1980). Today few islanders exhibit Seminole features, but Seminole names, like Bowlegs, are abundant. Seminole huts (chickees) and Seminole basket styles are still evident in the homes and outback farms of the inhabitants of Red Bays. These residents are conscious and proud of their Amerindian heritage (Newton, 1991).

Thus the current population of Andros has been dominated by African immigration, but has also been influenced by American, Caribbean, European, and Amerindian (specifically, Seminole) immigration. The affects of this multicultural heritage may be seen in plant use patterns.

METHODOLOGY

Field work was conducted in March, 1991; 18 May - 27 July, 1991, 14 December, 1991 - 8 February, 1992, 16 May - 9 August, 1992, 18 December 1992 - 2 January, 1993; 26 July - 8 August, 1993; and 12 March - 19 March, 1994 were also undertaken. An additional two weeks (27 July - 10 August, 1991) were spent at the Fairchild Tropical Gardens, Coral Gables, Florida, for the purpose of plant identification.

Accommodations were at Forfar Field Station in Blanket Sound. Most research was conducted within 20 miles of Forfar, but extended to the southern and northern limits of North Andros and Central Andros, when possible. Transportation was by various means.

Andros is divided into three major geographic regions, South Andros and Northern Andros, and the cays within the bights separating the two. North Andros is

further divided into two administrative districts, North and Central, divided at Stafford Creek. North and Central Andros are connected by road, while travel to the cays and South Andros is by boat or plane. Settlements, except Red Bays, are located along the eastern or northern coasts.

Home Garden Study

The project began with a home garden study of 58 households in three settlements within 10 miles of each other. The inhabitants of these three settlements were all known to, and often related in some degree to, each other. This is common in Bahamian settlements (Cash, et al., 1991; LaFlamme, 1988; Otterbein, 1966; Saunders, 1990). In most instances, at least one adult householder was home when the survey was taken, yet few (8) adults participated in the survey. However, children often actively participated and provided information concerning uses.

Ethnomedicinal Study

The focus of the next field season was a study of "bush medicine." After asking local inhabitants and long-term foreign residents it quickly became obvious that a limited number of "bush medicine" practitioners were respected and trusted throughout the region. An apprenticeship with one of these well known practitioners was undertaken. She agreed to the apprenticeship on the grounds that the information she taught was to be shared with Bahamians, because she felt that it was in danger of being lost upon her death. This had been suggested to her by Bahamians who purchase medicines from her.

Information was cross-checked with other consultants, including teenagers, and those claiming to know nothing or little wout bush medicine. Most Androsians knew at least some medicinal plants.

Resource Management

Subsequent field seasons continued the study of traditional medical practices, and added study of animal husbandry, straw work, plant cultivation and animal and plant collection regimes. Interviews concerning

traditional plant uses and subsistence agriculture were conducted whenever possible. Interviews consisted of several standard questions, then varied greatly, depending upon the level of knowledge, age, gender and status of the consultant.

Voucher Specimens

Plant specimens were often collected with the assistance of local consultants. Initially plants were collected whenever found in flower or fruit, even if they had not yet been defined as a resource. When possible, specimens were collected in triplicate. One set of specimens has been deposited with the Willard Sherman Turrell Herbarium (MU) at Miami University, Oxford, Ohio, USA. Duplicates will become available to other researchers and herbaria. Photographs of plants have been supplied to the Bahamian Department of Lands and Resources. When collecting specimens, their local names, use(s), and any anecdotal information were recorded in a field notebook, and sometimes on cassette tapes.

Specimens were dried using a field drier and when possible, sent to the Willard Sherman Turrell Herbarium within a few weeks. Otherwise, they were checked often, and periodically re-dried to reduce loss to insects and fungi. Due to governmental regulation, it was forbidden to collect orchids, cycads, cacti, or *Euphorbia*.

Plants were identified with a variety of sources, but primarily Correll and Correll, 1982; and Nickrent et al., 1991. Additionally the resources of the Willard Sherman Turrell Herbarium (MU) and the Fairchild Tropical Garden Herbarium (FTG), as well as the plant collections of the Dade County Fruit and Spice Park and the Fairchild Tropical Garden were helpful in identification.

DISCUSSION AND IMPLICATIONS

Despite the incomplete nature of this study, the data are substantial and expand our knowledge of traditional plant use by Androsians. Several general statements may be made about Androsian ethnomedicine. Medicinal complaints treated with plant medicines are quite varied, but the most

common categories were for colds, flu, fevers, coughs and diarrhea. Many Androsians take health tonics, strength tonics and aphrodisiacs. Medicinal plants are collected without temporal constraints. Knowledge is gained in an oral tradition, formally or informally, from family members or friends.

Most young Androsians are uninterested in learning about traditional medicine. According to the elders it is difficult to learn, and "the youth don't want to go to the black land (coppice)." Others however have taken up the challenge, realizing that it is an important part of their Bahamian heritage. At least one consultant received formal training in bush medicine at the former Teacher's College on San Salvador.

Androsians have been, and continue to be, affected by an amalgam of local and extra-local factors, yet the very nature of island life requires great dependence upon local resources. They are the heirs to a multicultural heritage, and this is reflected in their resource definitions and uses. Traces of these cultures are readily seen. Androsians speak English, and follow the political, legal, and educational systems of their former British colonizers, yet their economy is tightly linked to the US economy. Traces of African culture are readily evident in Androsian social patterns, encompassing religion (Obeah and African influenced worship within a framework of Western religions, characterized by spirit possession, sermon tempo, rhythmic movements, song style, belief in a benevolent God: Mitchell, 1975; Raboteau, 1978), marriage ("out-marriages" - a quasi-polygynous system; bilocal householdings: Randolph, 1994), and social stratification (funeral societies: Raboteau, 1978; Randolph, 1994, and a system of "god-parents" and "god-children": Klein, 1986).

Multicultural influences can also be inferred from medicinal plant use patterns by parallels in plant uses between Andros and other regions (Randolph, 1994). Three worldwide concepts, the Doctrine of Signatures, the concept of bitters, and the concept of the "hot" and "cold" nature of plants and the body are evident on Andros. The Doctrine of Signatures is the idea that the appearance of a plant or plant medicine will give a clue to its medicinal use (Lewis and

Elvin-Lewis, 1977; Simpson and Orgonzaly, 1986). The presence of bitter compounds is often an indication of alkaloid content, and many alkaloids are of medicinal value (Morton, 1974; Plotkin, 1993). The idea of "hot" and "cold" properties is that all organisms have these properties and must keep them in balance. Plants with these properties may be used to re-establish an equilibrium (Cominsky, 1983; Foster, 1983; Koumaré, 1983). Also, there is some significance to the number of days which medicines are taken. If a medicinal tea is taken for a specific purpose (rather than as just a general improvement to health), it is taken for seven or nine days. These numbers appear prominently in numerological theory in many cultures (Butler, 1970). The ancestors of Androsians may have brought these concepts of medicine from Africa, absorbed them from neighboring regions, or both.

Doctrine of Signatures: Medicines to treat anemia or "low blood" are generally red in color: "Brasiletta (*Caesalpinia vesicaria*), that's good for blood. When the tea done, the tea red, red"; Scurgeon Needle (*Opuntia cochenillifera*), when boiled is "red, red, red, good for blood." Canned Beets (*Beta vulgaris*), are also used for anemia. One medicine for constipation has a loose bark: "That will give you a free pass... just the way you see that Gammalamee (*Bursera simaruba*), the bark loose from the tree. That's the way your bowels will loose." Strong woods are used for strength and stamina. One plant with stiff, coriaceous leaves is called Stiff Cock (*Diospyros crassinervis*), and is included in aphrodisiacs. Ironwood (*Krugiodendron ferreum*), is used for anemia (to supply iron for blood).

Bitters: Many Androsian medicines are bitter [ex. Aloe (*Aloe vera*), Jackmada (*Eupatorium villosum*); Madeira (*Swietenia mahogoni*)] - "That there is bitter medicine."

"Hot" and "Cold": Shepherd's Needle (*Bidens alba*) will "cool the bowels", and is "good for cooling. "Gammalamee's (*Bursera simaruba*) nice - cooling for the inside." Teablinckum - "That's good tea, cooling for the inside."

While African medicine is closely tied to supernatural forces (Bascom, 1969; Coppo, 1983; Iwu, 1993; Oliver-Bever, 1986;

Parrinder, 1963), there is no evident link to the supernatural in the administration of medicines on Andros (no ceremonies), and no direct link between Obeah and traditional medicine on Andros, or elsewhere in the Bahamas (Higgs, 1974). There is a strong belief in God as a controlling factor in all aspects of life, including health. It is also a common concept that all plants have a use, and are put on Earth to be used. "Every ... bush you could use." Several taxa are used in unusual, almost ritualistic, manners. Bay Hops (*Ipomoea pes-caprae*) and Love Vine (*Cassytha filiformis*) are both used to relieve pain, but they are applied externally, being tied to the waist, to "draw the pain." In a similar manner, asthma may be passed on to a Gammalamee (*Bursera simaruba*) tree, by marking the tree with the patient's height. The patient must then walk away without seeing the tree, and if the tree is observed, the asthma will return (Christie, 1988). Another unusual plant use, is that of Love Me (*Tillandsia usneoides*) to determine whether a person truly loves you. Two methods are employed: 1) If you give the lover a piece of the plant and it turns brown in their hands, they do not love you; 2) If you give your lover a plant to grow, and it dies, they do not love you.

An examination of uses of plants in Africa and on Andros suggests some linkages (see APPENDICES 1 and 2). One interesting parallel is in the use of members of the Canellaceae. On Andros, *Canella alba* is used to treat toothache, flu, fever and stomach disorders, while members of the genus *Warburgia*, are used to treat toothache, fever and stomach ache in East Africa (Johns, et al., 1994; Kokwaro, 1976), and to treat flu, fever and digestive disorders in West Africa (Iwu, 1993). Other parallel uses include uses of Mistletoes (Kokwaro, 1976; Iwu, 1993), *Citrus* (McClure, 1982) and *Rhizophora* species (Iwu, 1993), and members of the Myrtaceae (Kokwaro, 1976; Iwu, 1993) for colds; Mistletoes (Kokwaro, 1976; Iwu, 1993) for headaches, *Crotalaria* (Kokwaro, 1976) and *Bidens* (Oliver-Bever, 1986) species for stomach complaints; and *Trema* species (Kokwaro, 1976) for coughs. Additionally, some African plant taxa, and their uses, have been directly transferred to the Caribbean (*Ricinus communis*, *Abrus precatorius*, *Cajanus*

cajan: McClure, 1982). Other taxa have been brought to the Caribbean through the African slave trade, and have established themselves there: *Musa X paradisiaca*, *Citrus* spp., *Dioscorea alata*.

Interestingly, some of the parallel uses in Africa are with Caribbean taxa: *Lantana camara* (Kokwaro, 1976; Iwu, 1993; Oliver-Bever, 1986); *Psidium guajava* (Iwu, 1993; Oliver-Bever, 1986). Their uses have been transferred back to Africa. This transfer also occurred with a number of food plants and spices: Corn (*Zea mays*), Cassava (*Manihot esculenta*), and spices Pepper (*Capsicum* spp.) (McNeill, 1991).

Some Androsians, especially those in Red Bays, share in Seminole culture. Some overlap (see APPENDIX 5) with plant use in the southern United States is evident (Morton, 1974, 1981).

Many Androsians have ancestors from other Caribbean and Bahamian islands. These areas show the highest overlap (See APPENDICES 3,4) in plant use, with the greatest overlap with other Bahamian islands (Randolph, 1994). This is, in part, due to the similarity in plant taxa. The next closest parallel in uses occur in nearby geographic regions: the Turks and Caicos and Cuba. Among some of the interesting parallels (See APPENDIX 4, and Randolph, 1994, for details of use and references) are the use of *Caesalpinia* spp. for anemia, *Eugenia* spp. for colds; several taxa as aphrodisiacs for both Andros and the Turks and Caicos; *Ipomoea pes-caprae* for pain on both Andros and Cuba. Parallel uses are found for most parts of the Caribbean, including the coastal countries. This is not surprising; Andros has been subject to immigration from these locales.

Several taxa show widespread use (see Randolph, 1994, for details of use): *Aloe vera*, *Ambrosia hispida*, *Annona muricata*, *Carica papaya*, *Catharanthus roseus*, *Citrus* spp., *Coccoloba uvifera*, *Cymbopogon citratus*, *Hymenocallis* spp., *Kalanchoë pinnata*, *Maranta arundinacea*, *Momordica charantia*, *Phyllanthus niruri*, *Psidium guajava*, *Stachytarpheta jamaicensis*, and *Sambucus* spp. Several of these have been shown to be medically active [*Aloe vera*; *Carica papaya*; *Catharanthus roseus*; (Simpson and Conner-Ogorzaly, 1986)]. Perhaps the others merit investigation.

SUMMARY

The people of Andros have been influenced by a wide range of cultural factors, from which they have created a unique system of resource definition and use. This fulfills their current needs. However, they are increasingly subject to extralocal influences, which have begun to undermine the traditional knowledge base. The young are no longer interested in farming, bush medicine, or other traditional tasks. It is hoped that this work will preserve part of the traditional knowledge base, and will inspire others to do the same.

An examination of Androsians' plant use reflects their multicultural background. Although the influence of African culture is clear from social and religious patterns, this does not necessarily mean that there was a great transfer of knowledge of plant use. Several taxa were brought directly from Africa, and their traditional use has continued (McClure, 1982). However, it is difficult to state that similar uses of other taxa represent a carryover of use patterns from Africa, or other regions. They may also be the results of independent discovery. This is a topic which has not been adequately discussed or investigated in the field of ethnobotany. The Seminole influence is readily seen on Andros, but further comparisons of medicinal plant uses are needed.

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APPENDIX 1 PARALLEL PLANT USES BETWEEN ANDROS AND EAST AFRICA

ANDROSIAN TAXA	EAST AFRICAN TAXA (if different)	USES
<i>Aloe vera</i>	<i>Aloe</i> spp.	Stomach disorders
<i>Asparagus densiflorus, A. setaceus</i>	<i>A. flagellaris</i>	Wounds, Bruises
<i>Bidens alba</i>	<i>Bidens</i> spp.	Stomach complaints
<i>Cajanus cajan</i>		Rid body of toxins
<i>Canella alba</i>	<i>Warburgia stuhlmanii, W. ugandensis</i>	Toothache
<i>Canella alba</i>	<i>Warburgia salutaris</i>	Fevers, Stomach ache.
<i>Citrus</i> spp.		Colds
<i>Crotalaria spectabilis</i>	<i>C. goodeniformis</i>	Stomach complaints
<i>Eugenia</i> spp.	<i>E. caryophyllata</i>	Colds
<i>Hypericum hypericoides</i>	<i>H. roeperanum</i>	Aphrodisiac/ Infertility
Loranthaceae		Flu
<i>Lantana camara</i>		Colds
<i>Phyllanthus niruri</i>	<i>Phyllanthus</i> spp.	Stomach Problems
<i>Trema lamarckianum</i>	<i>T. orientalis</i>	Coughs

APPENDIX 2 PARALLEL PLANT USES BETWEEN ANDROS AND WEST AFRICA

ANDROSIAN TAXA	WEST AFRICAN TAXA (if different)	USES
<i>Canella alba</i>	<i>Warburgia stuhlmanii, W. ugandensis</i>	Flu, Fever, Digestive disorders
<i>Catharanthus roseus</i>		Diabetes
<i>Citrus</i> spp.		Colds, Sores, Stomachache
<i>Eugenia</i> spp.	Myrtaceae spp.	Colds
<i>Hypericum hypericoides</i>	<i>H. aethiopicum</i>	Aphrodisiac/ Infertility
<i>Psidium guajava</i>		Diarrhea
<i>Rhizophora mangle</i>	<i>R. racemosa</i>	Colds
<i>Ricinus communis</i>		Cold, Fever, Skin ointment, Purgative

APPENDIX 3 PARALLEL PLANT USES BETWEEN ANDROS AND OTHER PARTS OF THE BAHAMAS

TAXA	USES
<i>Acalypha wilkesiana</i>	Colds
<i>Allium cepa</i>	Chest Cold
<i>Aloe vera</i>	Skin ailments, Burns, Wounds, Digestive complaints
<i>Ambrosia hispida</i>	Stomache ache, Gas, Indigestion, Fever, Colds
<i>Anethum graveolens</i>	Stomach complaints, "Baby's Gripes"
<i>Annona muricata</i>	Hypertension/ Fast Heart Beat
<i>Argemone mexicana</i>	Jaundice
<i>Artocarpus altilis</i>	Hypertension
<i>Ateramnus lucidus</i>	Upset Stomach
<i>Bidens alba</i> var. <i>radiata</i>	"Cooling"
<i>Bourreria ovata</i>	Strength Tonic, Back Pain, Anemia
<i>Bursera simaruba</i>	Aphrodisiac, Anemia, Strength Tonic, Poisonwood Dermatitis
<i>Cajanus cajan</i>	Fish Poisoning
<i>Canella alba</i>	Headache
<i>Carica papaya</i>	Worms
<i>Cassytha filiformis</i>	Aphrodisiac, Pain
<i>Catharanthus roseus</i>	High Blood Pressure, Diabetes
<i>Citrus</i> spp.	Colds
<i>Cocos nucifera</i>	Weakness
<i>Cordia bahamensis</i>	Treatment for mothers and newborns
<i>Cymbopogon citratus</i>	Fever
<i>Dendropemon</i> spp.	Colds
<i>Diospyros crassinervis</i>	Aphrodisiac
<i>Eugenia</i> spp.	Diarrhea
<i>Erythroxylum rotundifolium</i>	Strength tonic
<i>Guettarda scabra</i>	Aphrodisiac
<i>Ipomoea pes-caprae</i>	Strain, Pain
<i>Kalanchoe pinnata</i>	Shortness of breath, Asthma, Chest Colds

APPENDIX 3 PARALLEL PLANT USES BETWEEN ANDROS AND OTHER PARTS OF THE BAHAMAS

TAXA	USES
<i>Lantana camara</i>	Measles, Chicken Pox, Itching
<i>Maranta arundinacea</i>	Gruel for weakness
<i>Maytenus buxifolia</i>	Tuberculosis
<i>Momordica charantia</i>	Colds
<i>Musa X paradisiaca</i>	Strength Tonic
<i>Opuntia cochinellifera</i> , <i>O. stricta</i> var. <i>dillenii</i>	Internal Infections, burning and ulcers
<i>Parthenium hysterophorus</i>	Coughs, Colds, Sores
<i>Persea americana</i>	Hypertension
<i>Phoradendron</i> spp.	Colds, Flu
<i>Pyhllanthus epiphyllanthus</i>	Strength Tonic, Aphrodisiac
<i>Phyllanthus niruri</i>	Fever
<i>Pluchea odorata</i> , <i>P. symphitifolia</i>	Colds
<i>Psidium guajava</i>	Diarrhea
<i>Rhizophora mangle</i>	Severe Lower Back Pain (from pregnancy)
<i>Ricinus communis</i>	Colds
<i>Salvia serotina</i>	Colds
<i>Sambucus simpsonii</i>	Colds, Fevers
<i>Smilax</i> spp.	Blood Complaints
<i>Stachytarpheta jamaicensis</i>	Colds
<i>Stemodia maritima</i>	Tonic for new mothers
<i>Swietenia mahogoni</i>	Colds
<i>Tabebuia bahamensis</i>	Health Tonic, Aphrodisiac, Body Strain
<i>Thouinia discolor</i>	Weakness
<i>Trema lamarckianum</i>	Colds

**APPENDIX 4 PARALLEL PLANT USES BETWEEN ANDROS AND THE CARIBBEAN REGION
(exclusive of the Bahamas)**

ANDROSIAN TAXA	OTHER TAXA (if different)	LOCALES ¹	USES
<i>Acalypha wilkesiana</i>		J,Tr	Colds
<i>Aloe vera</i>		Ba,Cb,G,Ho, J,Ma,Me,MG, SB,To,Tr	Skin Problems, Wounds, Burns, Digestive Problems
<i>Allium cepa</i>		Ni,Tr	Chest Colds, Chest Congestion, Asthma
<i>Ambrosia hispida</i>		Cb, D, MG, TC	Colds, Stomach Complaints
<i>Ambrosia hispida</i>		Me	Fever
<i>A. paniculata</i> var. <i>cumanensis</i>		Cr, Ho	Colds, Digestive complaints
<i>Anethum graveolens</i>		DR, TC, WI	Stomach Complaints
<i>Annona muricata</i>		Ba,Cr,D,G,J, Ma,MG,Tr	Hypertension
<i>Argemone mexicana</i>		J,Me,PR,TC	Hepatitis, Jaundice
<i>Artocarpus altilis</i>		J,Tr	Hypertension
<i>Ateramnus lucidus</i>		TC	Stomach complaints
<i>Bourreria ovata</i>		TC	Back Pain
<i>Bursera simaruba</i>		Ba,D,J, Ni	Anemia
<i>Bursera simaruba</i>		Ba,D,J	Poisonwood remedy, Weakness (in back)
<i>Bursera simaruba</i>	<i>B. aloexylon, B. jorullense</i>	Me	Headache
<i>Cajanus cajan</i>		TC,Tr	Poison antidote
<i>Carica papaya</i>		Cb	Diarrhea
<i>Carica papaya</i>		G,Ho,J,SA, TC,To,Tr,V	Parasites
<i>Catharanthus roseus</i>		D,J,MG,TC, Tr	Hypertension, Diabetes
<i>Caesalpinia vesicaria</i>	<i>C. coriaria</i>	TC	Anemia
<i>Citrus</i> spp.		Pan-Caribbean Region	Colds, Sores, Wounds, Gas, Inflammation

**APPENDIX 4 PARALLEL PLANT USES BETWEEN ANDROS AND THE CARIBBEAN REGION
(exclusive of the Bahamas)**

ANDROSIAN TAXA	OTHER TAXA (if different)	LOCALES ¹	USES
<i>Coccoloba uvifera</i>		Cb,D,G,J,Ma, Me,Ni,TC,Tr	Diarrhea
<i>Cocos nucifera</i>		Ni	Hypertension
<i>Conyza parva</i>	<i>C. filaginoides</i>	Me	Colds
<i>Cymbopogon citratus</i>		Cr,D,G,J,Ma, Ni,TC,To,Tr	Fever
<i>Eugenia</i> spp.		TC	Diarrhea
<i>Erythroxylum areolatum</i>		Tr, To	Fatigue
<i>Eupatorium villosum</i>	<i>E. glabberinum</i> , <i>E. laevigatum</i>	Ho	Worms, Intestinal Problems
<i>Flaveria linearis</i>		Me	Water Stoppage, Gastrointestinal Complaints
<i>Guettarda scabra</i>		TC	Strength tonic
<i>Hymenocallis arenicola</i> , <i>H. latifolia</i>	<i>H. caribaea</i>	D,G,Ma,WI	Emetic
<i>Ipomoea pes-caprae</i>		Cb	Pain
<i>Kalanchoë pinnata</i>		D,G,J,Ma,Ni, SJ,TC,VI	Shortness of Breath
<i>Lantana camara</i>		D,J,G,Ma, MG,Tr	Colds, Itching
<i>Manihot esculenta</i>		Ni,Tr	Diarrhea
<i>Maranta arundinacea</i>		Be,D,G,J,Ma MG,ST,SV,Tr	Starch Tea
<i>Mikania scandens</i>	<i>Mikania</i> spp.	WI	Colds
<i>Momordica charantia</i>		A,Ba,Cb,D,G, J,Me,MG,Ni, ST,TC,Tr,V	Fever, Gripes, Colds
<i>Myrica cerifera</i>		Me	Colds, Diarrhea
<i>Opuntia cochinellifera</i> , <i>O. Stricta</i>		Ba,Cb,D,Tc,Tr	Internal Pain and Burning
<i>Parthenium hysterophorus</i>		D,J	Wounds, Colds

APPENDIX 4 PARALLEL PLANT USES BETWEEN ANDROS AND THE CARIBBEAN REGION
(exclusive of the Bahamas)

ANDROSIAN TAXA	OTHER TAXA (if different)	LOCALES ¹	USES
<i>Parthenium hysterophorus</i>		Cb	Colds
<i>Persea americana</i>		J,Tr	Hypertension
<i>Phoradendron</i> spp.		WI	Colds, Flu
<i>Phyllanthus epiphyllanthus</i>		TC	Aphrodisiac
<i>Phyllanthus niruri</i>		Cb,DR,G,H,J, Ma,PR,SJ	Fever
<i>Pluchea</i> spp.		Ho,J,SL,TC,Tr	Colds
<i>Polyscias guilfoylei</i>		J	Coughs, Colds
<i>Psidium guajava</i>		Cb,Co,D,DR, G,H,Ho,J,Me, Ni,SB,TC,Tr,V	Diarrhea
<i>Ricinus communis</i>		Cb,J,Me	Purgative
<i>Ricinus communis</i>		VI	Cold, Fevers
<i>Rivinus humilis</i>		Cb,D,J,ST,TC	Colds
<i>Sambucus simpsonii</i>		Cb,D,J,MG,Tr	Colds, Fevers
<i>Sambucus simpsonii</i>	<i>S. mexicana</i>	Ho,Me	Gripes, Coughs
<i>Smilax</i> spp.		Ni	Blood Complaints
<i>Stachytarpheta jamaicensis</i>		Ba,D,G,MG, ST,To,Tr	Colds
<i>Stachytarpheta jamaicensis</i>		Ni	Blood Complaints
<i>Swietenia mahogoni</i>		J,TC	Anemia, Aphrodisiac
<i>Swietenia mahogoni</i>		Me	General tonic, Dye
<i>Trema lamarckianum</i>		TC	Colds
<i>Vitex trifoliata</i>	<i>V. mollis</i> , <i>V. pyramidata</i>	Me	Choking/ Congestion

¹ - A- Antigua, Ba - Barbados, Be - Bermuda, Cb - Cuba, Co - Colombia, Cr - Curaçao, D - Dominica, DR - Dominican Republic, G - Guadalupe, H- Haiti, Ho - Honduras, J - Jamaica, Ma - Martinique, Me - Mexico, MG - Marie Galante, Ni - Nicaragua, PR - Puerto Rico, SA - South America, SB - Saint Bartholomew, SJ - Saint Johns, SL - Santa Lucia, ST - Saint Thomas, SV - Saint Vincent, TC - Turks and Caicos, To - Tobago, Tr - Trinidad, V - Venezuela, VI - Virgin Islands, WI - West Indies

APPENDIX 5 PARALLEL PLANT USES BETWEEN ANDROS AND THE SOUTHERN UNITED STATES

ANDROSIAN TAXA	U.S. TAXA (if different)	U.S. LOCALE¹	USES
<i>Juniperus barbadensis</i>	<i>J. salicicola</i>	SC	Colds
<i>Myrica cerifera</i>		SC	Colds
<i>Pinus caribaea</i> var. <i>bahamensis</i>	<i>P. palustris</i>	SC	Colds
<i>Ricinus communis</i>		NC	Cold, Fever, Purgative
<i>Zamia pumila</i>		SF	Starch

¹ NC - North Carolina, SC - South Carolina, SF - Southern Florida