

Coquille Flora (Louisiana): An Ethnobotanical Reconstruction¹

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Investigations and findings of a floristic study at Coquille, an archaeological site in Jefferson Parish, Louisiana, are reported. In contrast with the surrounding marsh and swamp, there is a distinctive diversity in the vegetation at the site. Most of the plants are native species that have been reported as ethnobotanically important to the southeastern Indians. It is postulated that if the plant community present at Coquille today were present in prehistory, this area was rich in botanical species potentially useful for foods, medicines, and other material resources.

This is a report of a floristic study made at Coquille (16Je37), an archaeological site in Jefferson Parish, Louisiana, for the purpose of reconstructing the ethnobotany of the aboriginal inhabitants. The site is located on Louisiana highway 45 at the confluence of Bayou Coquille and Bayou des Familles, about 2½ mi northwest of Crown Point and about 20 mi south of New Orleans (Fig. 1). It is in the Mississippi River deltaic plain, delineated by the watersheds of Bayou Segnette and Bayou Barataria. Over 60 archaeological sites have been surveyed in this area (Beavers, 1977). The site, in contrast with the surrounding swamp and marsh communities, is a disturbed, wooded area with bottomland hardwoods on earth mounds, more open woods at the base of the mounds, and marsh vegetation bordering adjacent Bayou Coquille. It is in the Jean Lafitte National Historical Park Barataria Marsh Unit, which is comprised of 8,600 acres of coastal wetlands (Beavers, 1982).

METHODOLOGY

The density and diversity of the living plant community at Coquille are remarkable. The flora on the earth mounds, an area measuring approximately 100 × 300 m, is rich in potentially-useful economic plants. This contrasts strongly with the flora of the neighboring swamp and marsh communities. In order to gain a better understanding of the cultural ecology of the aboriginal inhabitants, certain questions regarding possible ethnobotanical inference about prehistoric plant use at Coquille are posed. Why does this particular cluster of plants occur at the site? Is this flora similar to vegetation that was here in prehistory? If so, how might it have contributed to the subsistence of the indigenous population?

Since extensive excavations are not planned, an attempt was made to reconstruct the aboriginal ethnobotany from data obtained from other sources, in addition to the limited archaeobotanical remains already recovered. The methodology included a floristic study of the earth mounds, documentation of native American uses for plants inventoried, and corroboration of presence of the same plants in archaeological contexts at other sites in the coastal plain

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The floristic study was carried out during visits to the site in October 1977, November 1977, April 1977, and June 1981. Voucher specimens of most of the species were collected and deposited in the Vanderbilt University Herbarium (VDB). The plant inventory and species identifications were made with the help of Drs. Robert Kral and Eric Sundell. Documentation of Indian uses of plants inventoried was based on a literature search of ethnohistorical sources and ethnobotanical studies. Documentation of archaeological finds of any plants listed was based on a literature search of published reports.

FLORISTIC STUDY

Of 68 plants inventoried (Table 1), all but 3 are endemic to North America. The aliens are *Eichhornia crassipes* Mart. (water hyacinth), *Melia azedarach* L. (China tree), and *Sonchus asper* L. (spiny-leaved sow thistle). Of the remaining 65 plants, no documented use by native Americans was found for 8 species. They are *Baccharis halimifolia* L. (groundsel tree), *Commelina virginica* L. (day flower), *Dicliptera brachiata* (Pursh.) Spreng., *Ludwigia leptocarpa* (Nutt.) Hara. (false loosestrife), *Myosotis macrosperma* Engel. (forget-me-not), *Oplismenus setarius* Lam. (wood grass), *Spilanthes americana* (Mutis) Hieron. (creeping spilanthes), and *Vicia ludoviciana* Nutt. (vetch). Since day flower and vetch are recognized as edible wild plants (Fernald and Kinsey, 1958), if they were present prehistorically, they may have been utilized by the aborigines.

Although the plants found at Coquille are not unusual for southern Louisiana, the combination and cluster of plants found within the 300 × 100 m area is unusual. This is demonstrated by comparison of species found at Coquille with those reported from other floristic studies for the coastal plain. In an extensive study of the vegetation of marshlands in southeastern Louisiana, Penfound and Hathaway (1938) identified 8 types of plant communities. Of the 247 plants reported in these different communities, 15 are present at Coquille. Of 118 plants reported in Chabreck's (1972) study of the Louisiana coastal plain, 6 are at Coquille. Montz' (1972) survey of vegetation on levees along the Mississippi River and the Bonnet Carre Spillway in East St. Charles Parish, which adjoins the western boundary of Jefferson Parish, lists 89 plants and only 6 occur at Coquille. Of 62 plants reported on canal spoil banks in Cameron Parish (Spindler and Noble, 1974), 4 occur at Coquille.

The distinctive differences in the vegetation of archaeological sites in the Louisiana coastal plain have been demonstrated in a study of color infrared photographs of the region (Neuman and Byrd, 1980). They have also been documented by 2 studies of the vegetation on Indian middens in the coastal plain. Of 98 species reported by Brown (1936) on 16 Indian mounds in neighboring Plaquemines and St. Bernard Parishes, 24 are found at Coquille. Of 62 plants reported by Eleuterius and Otvos (1979) on 6 Indian middens in the marshes of Hancock County, Mississippi, 15 occur at Coquille.

In an overview of the above-combined figures, of 68 plants at Coquille, 36 have been reported in other botanical studies of the Coastal Plain region; 32 have not been reported. Of the 36 previously reported, 28 occur on Indian middens, and 14 have been reported exclusively on Indian habitation sites. The data indicate

TABLE 1. INVENTORY OF PLANTS AT COQUILLE ARCHAEOLOGICAL SITE.

—	<i>Acalypha rhomboidea</i> Raf. Copperleaf (Dunn 6, VDB)
—	<i>Acer rubrum</i> L. var. <i>drummondii</i> (H. & A.) Sarg. Maple (Dunn 33, VDB) ^a
—	<i>A. negundo</i> L. Box elder (Dunn 34, VDB)
—	<i>Andropogon virginicus</i> L. Beardgrass
—	<i>Arisaema dracontium</i> (L.) Schott. Dragonroot (Dunn 62, VDB)
—	<i>Arundinaria tecta</i> (Walt.) Muhl. Cane (Dunn 45, VDB)
—	<i>Aster praealtus</i> Poir. Aster (Dunn 22, VDB)
—	<i>Baccharis halimifolia</i> L. Groundsel tree (Dunn 56, VDB) ^{a,b,c,d}
—	<i>Carex crus-corvi</i> Shuttlw. Sedge (Dunn 64, VDB) ^a
—	<i>Carya illinoensis</i> (Wang.) K. Koch Pecan
—	<i>Celtis laevigata</i> Willd. Hackberry (Dunn 35, VDB) ^{c,e}
—	<i>Cephalanthus occidentalis</i> L. Buttonbush (Dunn 14, VDB) ^{a,d}
—	<i>Chaerophyllum tainturieri</i> Hook. Wild chervil (Dunn 43, VDB) ^{c,e}
—	<i>Cocculus carolinus</i> (L.) DC. Carolina moonseed (Dunn 9, VDB) ^e
—	<i>Commelina virginica</i> L. Day flower (Dunn 3, VDB) ^f
—	<i>Dicliptera brachiata</i> (Pursh.) Spreng. Dicliptera (Dunn 2, VDB)
—	<i>Diospyros virginiana</i> L. Persimmon (Dunn 31, VDB) ^{c,e}
—	<i>Eichhornia crassipes</i> (Mart.) Solms. Water hyacinth ^{b,d}
—	<i>Elymus virginicus</i> L. Wild rye (Dunn 12, VDB) ^{c,e}
—	<i>Erigeron philadelphicus</i> L. Fleabane (Dunn 58, VDB) ^{c,e,f}
—	<i>Eupatorium serotinum</i> Mich. Snakeroot (Dunn 19, VDB) [?]
—	<i>Euphorbia maculata</i> L. Eyebane (Dunn 54, VDB)
—	<i>Fraxinus americana</i> L. White ash (Dunn 30, VDB)
—	<i>Gallium tinctorium</i> L. Bedstraw (Dunn 44, VDB)
—	<i>Geranium carolinianum</i> L. Wild geranium (Dunn 41, VDB) ^{c,f}
—	<i>Geum canadense</i> Jacq. Avens (Dunn 20, VDB)
—	<i>Juncus effusus</i> L. Soft rush (Dunn 46, VDB) ^{a,d}
—	<i>Liquidambar styraciflua</i> L. Sweetgum ^a
—	<i>Lactuca floridana</i> (L.) Gaertn. Wild lettuce (Dunn 4, VDB)
—	<i>Ludwigia leptocarpa</i> (Nutt.) Hara. False loosestrife (Dunn 16, VDB)
—	<i>Melia azedarach</i> L. Chica tree (Dunn 28, VDB) ^e
—	<i>Modiola caroliniana</i> (L.) G. Don. Mallow (Dunn 17, VDB) ^f
—	<i>Morus rubra</i> L. Red mulberry (Dunn 13, VDB) ^e
—	<i>Myosotis macrosperma</i> Engelm. Forget-me-not (Dunn 63, VDB)
—	<i>Oplismenus setarius</i> (Lam.) R. & S. Wood grass (Dunn 7, VDB) ^e
—	<i>Polygonum punctatum</i> Ell. Knotweed (Dunn 15, VDB) ^b
—	<i>Polymnia uvedalia</i> L. Yellow leafcup (Dunn 1, VDB)
—	<i>Polypodium polypodioides</i> (L.) Watt. Resurrection fern (Dunn 68, VDB) ^e
—	<i>Quercus laurifolia</i> Mich. Laurel oak (Dunn 48, VDB)
—	<i>Q. nigra</i> L. Water oak (Dunn 51, VDB)
—	<i>Q. virginiana</i> Mill. Live oak (Dunn 26, VDB) ^{c,e}
—	<i>Rhus radicans</i> L. Poison ivy ^{c,e}
—	<i>Rubus trivialis</i> Mich. Dewberry (Dunn 57, VDB) ^e
—	<i>Sabal minor</i> (Jacq.) Persoon Palmetto ^{a,c,e}
—	<i>Salix nigra</i> Marsh. Willow (Dunn 49, VDB) ^{a,c,d}
—	<i>Sambucus canadensis</i> L. Elderberry ^{a,c,e}
—	<i>Sanicula canadensis</i> L. Black snakeroot (Dunn 67, VDB)
—	<i>Scirpus</i> L.
—	<i>Senecio glabellus</i> Poir. Butterweed (Dunn 21, VDB) ^{a,b}
—	<i>Sida rhombifolia</i> L. Sida (Dunn 18, VDB) ^f
—	<i>Smilax bona-nox</i> L. Greenbrier (Dunn 65, VDB) ^{a,c,e}
—	<i>S. hispida</i> Muhl. Greenbrier (Dunn 61, VDB)
—	<i>S. rotundifolia</i> L. Greenbrier (Dunn 66, VDB)
—	<i>Solidago altissima</i> L. Goldenrod (Dunn 11, VDB)

NOT LISTED BY
TOLANE

Beard grass
Cane
Carolina moonseed
Eyebane
? White ash
Wood grass
Laurel oak
Hill Santhistle

TABLE 1. CONTINUED.

<i>Sonchus asper</i> (L.) Hill Sow thistle (Dunn 47, VDB)
<i>Spilanthes americana</i> (Mutis) Hieron. Creeping spilanthes (Dunn 23, VDB) ^f
<i>Stachys tenuifolia</i> Willd. (Dunn 42, VDB)
<i>Taxodium distichum</i> (L.) Richard Bald cypress ^{a,d}
<i>Thalictrum dasycarpum</i> Fisch. & All. Meadowrue (Dunn 10, VDB)
<i>Thelypteris kunthii</i> (Desv.) Morton Shield fern (Dunn 59, VDB)
<i>Tillandsia usneoides</i> L. Spanish moss (Dunn 52, VDB) ^{e,e}
<i>Tradescantia ohimensis</i> Raf. Spiderwort (Dunn 36, VDB)
<i>Typha latifolia</i> L. Cat-tail
<i>Ulmus americana</i> L. American elm (Dunn 27, VDB)
<i>U. rubra</i> Muhl. Slippery elm (Dunn 50, VDB)
<i>Verbesina virginica</i> L. Tickweed (Dunn 8, VDB) ^e
<i>Vicia ludoviciana</i> Nutt. Vetch (Dunn 38, VDB) ^{a,c,e}
<i>Vitis rotundifolia</i> Michx. Muscadine grape (Dunn 60, VDB)

^a Penfound and Hathaway, 1938; ^b Spindler and Noble, 1974; ^c Brown, 1936; ^d Chabreck, 1972; ^e Eleuterius and Orvos, 1979; ^f Montz, 1972.

that more detailed, quantified studies would be valuable for determining whether there are consistent differences among vegetation assemblages on canal spoil banks, levees, Indian mounds, natural rises occupied by Indians, and natural rises not occupied by Indians.

ARCHAEOLOGICAL BACKGROUND

The Coquille site has been classified as a large habitation site or village, characterized by the presence of plain and decorated pottery, lithics, bone tools, faunal remains, daub fragments (fired clay from wattle and daub house construction), post holes, other features, human burials, and a midden depth greater than 50 cm. Test excavations were made at Coquille by the University of New Orleans Archaeological Field School during the summers of 1977 and 1978. The excavations yielded a large assemblage of Marksville period artifacts. Radiocarbon dates range from 115–255 A.D., and Coquille is listed on the National Register of Historic Places as a large population center of the Marksville period (Beavers, 1982).

Coquille is significant archaeologically because it is presently the only site on the coastal plain where a complete ceramic sequence from the Tchula period through the Mississippi period has been documented.

In the Lower Mississippi Valley, Tchefuncte culture corresponds with the Tchula period, dating from approximately 300–100 B.C. This was the time of initial appearance of pottery in the area. The subsequent Marksville period, 100 B.C.–300 A.D., was marked by the occurrence of Hopewell culture in the Lower Mississippi Valley. Later chronological periods are Baytown, 300–700 A.D.; Coles Creek, 700–1000 A.D., and Mississippi, beginning ca. 1000 A.D. and extending into historic times (Phillips, 1970). Within most of the Louisiana portion of the Lower Mississippi Valley, the Mississippi period was dominated by Plaquemine culture, followed by Mississippian culture after 1500 A.D. in northeastern Louisiana (Halley, 1972). Phillips (1970) postulated that there was a late prehistoric or protohistoric spread of Mississippian culture along the Gulf Coast from the area around Mobile, Alabama, into Louisiana. Evidence to support this comes from the Sims

TABLE 2. FOOD AND BEVERAGE PLANTS AT COQUILLE ARCHAEOLOGICAL SITE.

<i>Acer negundo</i>	Sugar from sap. ^a
<i>A. rubrum</i>	Sugar from sap; dried, pounded bark for bread. ^{a,b}
- <i>Arundinaria tecta</i>	Seeds ground into flour. ^c
<i>Aster praealtus</i>	Leaves boiled for greens. ^d
<i>Carex crux-corvi</i>	Stem and roots cooked. ^a
<i>Carya illinoensis</i>	Nuts eaten; oil extracted from nuts for cooking. ^a
<i>Celtis laevigata</i>	Fruit raw or dried and ground into meal. ^{a,e}
<i>Diospyros virginiana</i>	Fruit fresh, cooked or dried, ground into meal, or fermented into beer. ^{a,e,f}
<i>Eichhornia crassipes</i>	Young plant parts cooked. ^g
<i>Elymus virginicus</i>	Seeds ground into flour. ^g
<i>Geum canadense</i>	Boiled roots used for chocolate substitute. ^g
<i>Lactuca floridana</i>	Young plant parts cooked as greens. ^g
<i>Morus rubra</i>	Berries eaten raw or cooked. ^g
- <i>Polygonum punctatum</i>	Young shoots cooked; leaves used as seasoning; seeds parched and eaten as cereal. ^{a,g}
- <i>Quercus laurifolia</i>	Acorns dried, roasted, boiled, ground into flour. ^g
<i>Q. nigra</i>	Use same as <i>Q. laurifolia</i> . ^{a,g}
<i>Q. virginiana</i>	Acorns ground into flour; sweet oil from nuts. ^{b,g}
<i>Rubus trivialis</i>	Berries fresh, cooked or dried. ^a
<i>Sabal minor</i>	Rootstock cooked. ^a
<i>Sambucus canadensis</i>	Berries fresh, cooked, dried, made into jelly or wine; blossoms steeped for tea or cooked; young shoots cooked. ^{a,b,g}
<i>Scirpus</i>	Roots and young shoots eaten raw; roots, seeds and pollen used for flour. ^{a,b,e,g}
<i>Smilax</i> spp.	Roots made into flour, a favorite Choctaw food. ^{a,g,h}
<i>Solidago altissima</i>	Leaves cooked as greens; dried leaves for tea; seeds eaten. ^g
<i>Typha latifolia</i>	Seeds roasted; pollen for flour; roots cooked. ^{a,g}
<i>Ulmus rubra</i>	Inner bark chewed, brewed as tea or flavoring. ^g
<i>Vitis rotundifolia</i>	Fruits eaten raw, cooked or dried. ^{a,b,g,i}

^a Yanovsky, 1936; ^b Havard, 1896; ^c Swanton, 1946; ^d Densmore, 1928; ^e Morton, 1963; ^f Carr, 1947; ^g Speck, 1941; ^h Bushnell, 1909; ⁱ Brown, 1868.

site (16SC2), St. Charles Parish, Louisiana, which produced Mississippian ceramic assemblages from the late prehistoric and historic times (Davis and Giardino, 1980).

During the 1977 excavations at Coquille, soil samples of 1 m² columns were collected from ash deposits in 2 test pits, processed by simple flotation, and examined microscopically for archaeobotanical remains. The plant remains included carbonized specimens identified as oak (*Quercus* sp.) and cane (*Arundinaria* sp.). The test pits were excavated in a series of small rises in a dry marsh zone about 300 m from the earth mounds and central area of the archaeological site. The midden was composed primarily of freshwater clam (*Rangia cuneata*) shells, and the artifact assemblage included ceramics, bone tools, and faunal remains of deer, small mammals, fish, birds and reptiles. This area was interpreted as a specialized food procurement and processing station (Beavers, 1977). The absence of seeds and other plant remains may be related to problems of preservation, or may be because such materials were not utilized in the activities performed at this location.

TABLE 3. CURATIVE AND MEDICINAL PLANTS AT COQUILLE ARCHAEOLOGICAL SITE.

	<i>Acalypha rhomboidea</i>	Reputed to have medicinal properties, used by Indians of Mexico and Southwest. ^{a,b}
	<i>Acer negundo</i>	Inner bark tea mild laxative. ^c
	<i>A. rubrum</i>	Inner bark decoction treatment for worms, eye ailments, poultice for skin abrasions. ^d
	<i>Andropogon virginicus</i>	Plant parts tea in pregnancy to strengthen mother and baby. ^e
	<i>Arisaema dracontium</i>	Extract from boiled root to "make blood." ^f
	<i>Arundinaria tecta</i>	Infusion from boiled roots to "renew strength," stimulate kidneys. ^g
	<i>Aster praecaltus</i>	Root tea for diarrhea. ^h
	<i>Celtis laevigata</i>	Bark tea for sore throat. ⁱ
	<i>Cephalanthus occidentalis</i>	Inner bark tea emetic, laxative, tonic; bark chewed for toothache; boiled extract for sore eyes. ^{d,i,h}
	<i>Cocculus carolinus</i>	Root tea "blood clarifier." ^e
	<i>Erigeron philadelphicus</i>	Smoke inhaled to relieve head cold; tea for fever. ^{e,j}
	<i>Eupatorium serotinum</i>	Root tea for kidney trouble, menstrual cramps. ^k
	<i>Euphorbia maculata</i>	Milky juice laxative, emetic; applied to skin for warts, sores, eruptions, eczema, sore nipples. ^{d,e,k}
	<i>Juncus effusus</i>	Emetic. ^j
	<i>Liquidambar styraciflua</i>	Boiled roots, fevers, antiseptic for wounds, cuts, sores. ^{e,l,j}
	<i>Modiola caroliniana</i>	Plant crushed in cold water, gargle for sore throat or diphtheria. ^g
	<i>Morus rubra</i>	Bark preparation used for worms, fever, laxative. ^d
	<i>Polygonum punctatum</i>	Boiled root tea for pains and swellings of legs and joints. ^e
	<i>Polymnia uvedalia</i>	Crushed leaves poultice to reduce swelling; root decoction emetic and aid in expelling afterbirth. ^g
	<i>Polypodium polypodioides</i>	Boiled fronds tea for headache, dizziness, sore mouth, bleeding gums, thrush in babies. ^g
	<i>Rhus radicans</i>	Leaf tea tonic and rejuvenator; bark tea given to one who dreams of snakes. ^{e,h}
	<i>Sabal minor</i>	Root extract kidney trouble, sore eyes, high blood pressure. ^e
	<i>Salix nigra</i>	Root and bark tea fever, lumbago, colds, asthma, indigestion, diarrhea, ulcers, gangrene. ^e
	<i>Sambucus canadensis</i>	Boiled bark poultice for pain, swelling, rheumatism, sores, burns. ^{d,e}
	<i>Sanicula canadensis</i>	Root tea for colic, stomach trouble. ^k
	<i>Senecio glabellus</i>	Infusion used for diarrhea. ^h
	<i>Smilax bona-nox</i>	Boiled root tea kidney and urinary trouble. ^e
	<i>Solidago altissima</i>	Root tea jaundice, cold, toothache. ^{e,k,j}
	<i>Thalictrum dasycarpum</i>	Root tea for fever. ^e
	<i>Thelypteris kunthii</i>	Root decoction emetic; external application for rheumatism. ^k
	<i>Tillandsia usneoides</i>	Tea relief for chills and fever. ^g
	<i>Tradescantia ohioensis</i>	Root tea mild remedy. ^e
	<i>Ulmus americana</i>	Bark poultice skin inflammations; bark infusion dysentery, kidney ailments, appendicitis, tonic. ^{d,j}
	<i>U. rubra</i>	Inner bark decoction laxative, fever, diarrhea, childbirth, respiratory and urinary tract infections, sore throat; inner bark poultice burns, boils, abscesses, infected wounds. ^{e,d,h}
	<i>Verbesina virginica</i>	Pounded soaked root used to treat fever. ^f

^a Small, 1927; ^b Ford, 1975; ^c Fielder, 1975; ^d Krochmal and Krochmal, 1973; ^e Speck, 1941; ^f Bushnell, 1909; ^g Banks, 1953; ^h Mooney and Olbrechts, 1932; ⁱ Vogel, 1970; ^j Taylor, 1940.

TABLE 4. PLANTS USED FOR CONSTRUCTION AND UTILITARIAN ITEMS AT COQUILLE ARCHAEOLOGICAL SITE.

<i>Acer negundo</i>	Spoons. ^a
<i>A. rubrum</i>	Cordage made from bark. ^a
<i>Arundinaria tecta</i>	Building material, backing for wattle walls, stockades, fences, fish crails, traps, corncribs, weaving shuttles, boxes, beds, cradles, sieves, hampers, litters, baskets, arrows, spears, weapons. ^{a,b}
<i>Celtis laevigata</i>	Baskets. ^a
<i>Cocculus carolinus</i>	Fish poison from berries. ^a
<i>Fraxinus americana</i>	Wood for canoes and fish spears. ^c
<i>Juncus effusus</i>	Mats, bags, pouches. ^c
<i>Morus rubra</i>	Inner bark for cordage; source of tinder. ^a
<i>Quercus virginiana</i>	Favorite firewood. ^a
<i>Sabal minor</i>	Leaves for thatching and baskets. ^{a,b,d}
<i>Salix nigra</i>	Fiber for bags, pouches, fishnets, cordage. ^c
<i>Scirpus</i>	Mats and baskets. ^{c,e}
<i>Sida rhombifolia</i>	Juice from leaves for washing hair. ^f
<i>Taxodium distichum</i>	Split shingles, bark for house coverings, bark strips for cordage, favorite wood for canoes, tinder from dried, decayed wood. ^{a,d}
<i>Tillandsia usneoides</i>	Dried fibers twisted into cordage, woven into mats, stuffing, tinder for fire arrows. ^{a,b}
<i>Ulmus americana</i>	Bark for canoes, wood for spoons; forked trees for building posts; logs for mortars and pestles. ^a
<i>Vitis rotundifolia</i>	Vines for cordage. ^a

^a Swanton, 1946; ^b Speck, 1941; ^c Yarnell, 1964; ^d Bushnell, 1909; ^e Brown, 1868; ^f Ford, 1975

Preservation of archaeobotanical remains in humid climates, such as the southeastern United States, is generally the result of carbonization. When plant parts are changed from their natural chemical state to elemental carbon by burning, the original plant structure remains intact, and identifications of preserved, carbonized plant remains have contributed much information about plant use in prehistory (Dimbleby, 1967). The finds of daub in the area of the earth mounds indicate that remains of burned structures may be present. If so, this represents an optimal situation for the preservation of plant remains (Hally, 1981). It is, therefore, possible that more extensive excavations at Coquille would yield archaeobotanical materials associated with occupational components.

ETHNOBOTANY

Ethnohistorical sources and ethnobotanical studies were researched for documentation of economic uses of plants found at Coquille. Approximately 87% of the native plants have been reported as having been used ethnobotanically by Southeastern Indian tribes. The plants and their uses are listed under 4 categories: (1) food and beverage plants (Table 2); (2) curative and medicinal plants (Table 3); (3) plants used for construction and utilitarian items (Table 4); (4) plants used for textiles, dyes, and paints (Table 5). Some plants have multiple uses and are listed in more than one category.

The ethnobotanical literature indicates that a large percentage of the plants found at Coquille today were utilized by the Southeastern Indians. However, due

bamboo
River cane

TABLE 5. PLANTS USED FOR TEXTILES, DYES AND PAINTS AT COQUILLE ARCHAEOLOGICAL SITE.

<i>Acer negundo</i>	Charcoal for ceremonial painting and tattooing. ^a
<i>A. rubrum</i>	Source of dark purple dye. ^b
<i>Galium tinctorium</i>	Source of red dye. ^c
<i>Morus rubra</i>	Roots yellow dye; inner bark fibers for textiles and hair netting. ^b
<i>Quercus virginiana</i>	Red basket dye from bark and roots. ^d
<i>Sabal minor</i>	Clothing. ^b
<i>Tillandsia usneoides</i>	Clothing. ^{b,d}
<i>Ulmus rubra</i>	Textiles woven out of bark fibers. ^b

^a Gilmore, 1919; ^b Swanton, 1946; ^c Fielder, 1975; ^d Speck, 1941.

to the incomplete ethnohistorical and archaeological record, it is not possible to specify precisely which plants were used by the different tribes. Therefore, it is not possible to document the full extent of environmental exploitation by aboriginal groups. The indications are, however, that an unusually high number of useful plants occur at Coquille. By comparison, in a study of plant use among Indians of the Upper Great Lakes, it was estimated that 20% of the vascular plants in that environment were exploited (Yarnell, 1964).

ARCHAEOBOTANY

A number of plants at Coquille have been identified among plant remains from 3 archaeological sites in Louisiana: the Morton Shell Mound, Iberia Parish (Byrd, 1976); the Troyville mounds, Catahoula Parish (Walker, 1936), and the Brusly St. Martin site, Iberville Parish (Byrd and Neuman, 1978). Those plants are *Taxodium distichum*, *Smilax*, *Salix*, *Quercus*, *Celtis*, *Polygonum*, *Vitis*, *Diospyros virginiana*, *Typha*, *Carex*, *Rubus*, *Euphorbia*, *Galium*, *Sambucus canadensis*, and *Arundinaria*. Of these 15 plants, 10 are edible, and all have documented ethnobotanical uses. Their remains in archaeological contexts at sites in the deltaic plain indicates probable important uses in prehistoric subsistence patterns.

DISCUSSION

The distinctiveness of the vegetation of ancient middens and Indian mounds is a phenomenon in the Americas that has been observed and reported by a number of authors (Darwin, 1845; Gilmore, 1930; Moseley, 1930; Brown, 1936; Hrdlicka, 1937; Meigs, 1938; Lundell, 1939; Zeiner, 1946; Yarnell, 1965; Eleuterius and Otvos, 1979). Reasons postulated to account for the differences in vegetation of ancient habitation sites and their surrounding environments are (1) edaphic factors, such as variation in soil acidity and elevation levels (Hrdlicka, 1937; Zeiner, 1946); (2) the dispersal of seeds by natural means, such as wind, water, birds, and other animals (Brown, 1936; Meigs, 1938); (3) introduction by human agency (Gilmore, 1930; Lundell, 1939). Yarnell (1965) pointed out that the distinctiveness of the flora at archaeological sites is probably due to a combination of all 3 factors. He emphasized that if it can be demonstrated that humans had a close relationship with the plants represented and the habitat was created by human activities, then there is a greater probability that those species were exploited by the prehistoric population.

CONCLUSIONS

It has been shown in this study that the diversity and distribution of plants at the Coquille site is unusual and contrasts with the surrounding plant communities. It has also been shown that a large percentage of the plants have known ethnobotanical uses. It is proposed that one reason accounting for some of the differences in vegetation is elevation. Eleuterius and Otvos (1979) observed that there is a direct correlation between reduction in elevation of sites and reduction of diversity of plant species. This is also true at Coquille. However, this factor alone cannot account for the high number of ethnobotanically-significant plants in the site area. It is proposed that many of the plants may have been introduced into this area by the aboriginal inhabitants. Evidence to test this hypothesis may be gained from extensive archaeological excavations at Coquille and from floristic studies of more Indian sites in the Mississippi deltaic plain. Future studies should provide more information for understanding the distribution of plants due to cultural relationships with man in prehistory, and for broadening awareness of the potential ethnobotanical contribution of particular environments to aboriginal subsistence patterns. Questions which need further investigation are: did the Southeastern Indians have available a significantly greater number of economically-useful plants in their natural environment, and did they actually exploit significantly higher numbers of plants in their subsistence patterns?

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