

## EVIDENCE FOR A CALUSA-TUNICA RELATIONSHIP

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### The Data and Its Analysis

We have Spanish translations for only a dozen lexical forms in the extinct Calusa language of South Florida. Ten come from the 1575 *Memoir* of D<sup>e</sup> d'Escalante Fontaneda, who lived as a captive with the Calusa in southwest Florida from the age of 13 to the age of 30 (Fontaneda 1945). The eleventh, **mahoma**, comes from a 1697 letter from Fr. Feliciano López to Fr. Pedro Taybo (reproduced in translation in Hann (1991:158-161); and the twelfth, **sipi**, is found in a 1743 *Informe* from Fr. Joseph Xavier de Alaña to his superiors (reproduced in the original Spanish in Sturtevant 1978:154-161). Of these forms five (**Cuchiyaga**, **Guarugu(n)be**, **Guasaca Esgui**, **Mayaimi**, and **Ño**) are place-names, two (**Cañogacola**, **Carlos**) the names of tribal groups, one (**sipi**) the name of a deity, two (**mahoma**, **tejiEue**) the names of building types, one (**certepe**) a title, and one (**seletega**) a single-word sentence. None has a demonstrable etymology in either Timucua or Apalachee, the two dominant languages of the peninsula in late prehistoric and early historic times. The putative Choctaw "translations" of the last century (Fontaneda 1854) are random Calusa-Choctaw sound-alikes and, in my opinion, best forgotten.

There are only two options for handling this minute bit of language data, imperfect though it may be: (1) leave it alone, which has been the choice of most, or (2) do what can be done with it using the analytical techniques of 20th century synchronic and diachronic linguistic method, the latter in full realization that the outcome can only be an empirically derived hypothesis. I have opted for the last choice on the premise that a data-base is there, and ignoring it will not make it go away. The hypothesis I propose can be tested against additional linguistic, ethnographic, and archaeological data.

### The Calusa Language

Fontaneda (1945, throughout) lists and discusses six ethnic and/or political entities — Carlos (the southwest Florida, Charlotte Harbor region), Guacata (around Lake Okeechobee in interior South Florida), the Martires (the Keys), Tequesta (in the Miami region), Tocobaga (around Tampa Bay), and Cañogacola (to the north of Tampa Bay). It is these for which we have the greatest number of toponyms. Of the dozen translated forms to be discussed here two — **Cañogacola** and **Guasaca Esgui** — refer to regions above Tampa on the Gulf Coast, six — **Carlos**, **certepe**, **mahoma**, **Ño**, **seletega**, and **tejiEue**, come from the lower Southwest Gulf Coast Charlotte Harbor-Pine Island Calusa area, one — **Mayaimi** — is from the Lake Okeechobee region, one — **sipi** — comes from the Tequesta Southeast Atlantic Coast Miami region, and two — **Cuchiyaga** and **Guarugu(n)be** — are in the Keys.

While neither Fontaneda nor any other contemporary chronicler specifically states that all of these ethnic/political entities spoke the same language, neither is there any documentary indication that they spoke different languages. Fontaneda makes it clear (1945:31, 32, 70, 71) that the language of the Calusa was neither Timucua nor Apalachee and that he understood the speech used in the Martires, Guacata, Carlos, Tequesta, Tocobaga, and Cañogacola entities in addition to Timucua and Apalachee. Since he also states (1945:31, 70) that he spoke four languages, two of which were most likely Timucua and Apalachee and the third Spanish, the implication is that the inhabitants of Guacata, Carlos, Tequesta, Tocobaga, Cañogacola, and the Keys all spoke one language, Fontaneda's fourth language. It is my feeling that careful linguistic analysis of the above forms, as well as of several other toponyms for which no translation is provided, indicates that the six ethnic/political units did, indeed, speak dialects of a single language, which I refer to here as Calusa, the name of the politically dominant ethnic entity in South Florida.

#### General Results of Etymological Comparisons: Calusa and Tunica

In the analysis of the dozen South Florida forms each was compared phonologically, morphologically, and semologically to vocabularies of all of the native languages of the Southeastern United States and, because of the probable South American origins of the Timucua language of Florida and Georgia (Granberry 1993), to vocabularies of the major languages of northern South America and southern Meso-America.

We are told (Fontaneda 1945:68-69) that invited Cuban Taíno Arawak occupied the Calusa settlement of *Abaibo* (Lewis 1978:26), which is Taíno for "First Nearby Home" — *aba* "first" + *i* "nearby" + *bo* "home" (Granberry 1991:8). This is the only indication from any of the Calusa language data of an Antillean or South American connection.

Putative Spanish etymologies for two of the forms should probably be discounted. *Carlos* is said by some late 16th century secondary sources (Solís de Merás 1964:151, López de Velasco 1971 cited in Hann 1991:309) to have been used by the Calusa, including Chief Carlos' father, out of devotion to Charles I of Spain (b. 1500 - d. 1558), who reigned 1516-1556. Given that Charles was only a boy of 13 and not yet on the throne when the Calusa form *Carlos* is first mentioned by Juan Ponce de León in 1513 (Herrera y Tordesillas 1730:I, 248), that Carlos' father is unlikely even to have been born then, and that we know from extensive documentary evidence that the Spanish in general and Christians in particular were held in extremely low esteem from the onset of contact in 1513 well into the late 1700's (cf. especially Lewis 1978, Hann 1991), such a statement is thoroughly suspect. It is, rather, much more likely that the Jesuit priest Fr. Juan Rogel, a first-hand observer of the Calusa in 1566-67, is correct when he says in a 1567 letter to Fr. Didacus Avellaneda that the king of the Calusa was called ". . . Caalus, which the Spanish, mispronouncing the word, call him Carlos . . ." (Hann 1991:280 from *Cod. Hispan.* 105 ff. 72-77). Fontaneda (1945, throughout) uses only the form *Carlos* and provides a Spanish translation of the word — "quiere desir en su lenguaje pueblo feros" (Fontaneda 1945:26, 67).

The word *mahoma*, in the phrase *casa de mahoma*, has been translated "house of

Mohammed" (Hann 1991:44, 159). This is as suspect as the uncritical assignment of the Calusa word *Carlos* to its Spanish counterpart, for the Calusa never gave up their native religious beliefs for Christianity over a period of more than two centuries, and it is highly doubtful that a native Calusa speaker would malign his own house of worship with a Spanish pejorative phrase.

With the two exceptions discussed in the previous paragraphs, comparison of the 12 translated forms showed similarities to only one of the languages chosen for comparison — the Tunica language, formerly spoken on the lower course of the Yazoo River in upper Louisiana and adjacent western Mississippi and eastern Arkansas (Swanton 1952:193-194).

The Calusa-Tunica parallels are specific, detailed, uniform, and regular, all canonical requirements for the demonstration of genetic relationship in comparative linguistics. These similarities are far above the chance level — every constituent morpheme but one of the 12 translated Calusa forms has a patterned, similar or identical analog in Tunica. This is particularly striking since the Tunica forms used for comparative purposes date from almost four hundred years later than the Calusa data, and Tunica-Calusa similarities must consequently have been much greater both in the 1500's and in the more distant past.

### Calusa-Tunica Phonological Comparisons

Given the detailed, patterned similarities between Calusa and Tunica, it is possible to suggest the following Proto-Tunica phoneme inventory: voiceless stops \**p*, \**t*, \**k*, and \**ʔ*; voiceless spirants \**s*, \**ʃ*, and \**h*; voiceless affricate \**č*; voiced nasals \**m*, \**n*, and \**ñ*; voiced lateral \**l*; voiced trill \**r*; voiced semivowels \**w* and \**y*; high front vowel \**i*; mid front vowel \**e*; lower mid front vowel \**ɛ*; low central vowel \**a*; high back vowel \**u*; mid back vowel \**o*; and lower mid back vowel \**ɔ*.

Judging from Fontaneda's spelling conventions, to be discussed later, stops were probably lenis and unaspirated. Other spelling conventions indicate that \**r*, \**w*, \**y*, \**m*, \**n*, \**ñ*, and \**l* probably had voiceless allophones before other voiceless phones, here indicated as \**R*, \**W*, \**Y*, \**M*, \**N*, \**Ñ*, and \**L* when they occur in specific morpheme examples.

Tunica phonemes, as given by Haas (1946:337-341) are: voiceless fortis aspirated stops *p*, *t*, *k*, and *ʔ*; voiceless spirants *s*, *ʃ*, and *h*; voiceless affricate *č*; voiced nasals *m* and *n*; voiced lateral *l*; voiced trill *r*; voiced semivowels *w* and *y*; high front vowel *i*; mid front vowel *e*; lower mid front vowel *ɛ*; low central vowel *a*; high back vowel *u*; mid back vowel *o*; and lower mid back vowel *ɔ*. Nasals *m* and *n*, lateral *l*, trill *r*, and semivowels *w* and *y* have voiceless allophones *M*, *N*, *L*, *R*, *W*, and *Y* before voiceless phones. Inherent stress occurs on the initial syllable of polysyllable stems and on some affixes.

Calusa phonemes, as reconstituted from Fontaneda's orthography in the present paper, may be suggested as: voiceless stops *p*, *t*, *k*, and *ʔ*, probably lenis and unaspirated, to judge from Fontaneda's spelling conventions; voiceless spirants *ʃ* (see the next paragraph for an explanation

of this reconstituted phoneme) and *h*; voiceless affricate *č*; voiced nasals *m*, *n*, and *ñ*; voiced lateral *l*; voiced trill *r*; voiced semivowels *w* and *y*; high front vowel *i*; mid front vowel *e*; low central vowel *a*; high back vowel *u*; and mid back vowel *o*. It is worth pointing out that the only Gulf Group language which has an *r*, also present in Calusa, is Tunica.

A pre-palatal consonant *š* is postulated for Calusa, rather than a simple dental *s* or mid-palatal *ʃ*, for two reasons: (1) It corresponds to both Tunica dental *s* and glottal *h*, at the two extremes of the oral cavity, as well as to Tunica mid-palatal *ʃ*, made mid-way in the oral cavity — *š* "splits the difference", as it were, being a sound which is largely *s*-like yet which partakes of *ʃ*-like and *h*-like characteristics; (2) It is usually represented by an *s* in Fontaneda's orthography, but in at least the case of *tejiEue* it is represented by *ji*, a Spanish orthographic combination for a pre-palatal spirant. If mediopalatal *š* were intended, the Spanish grapheme *x* would probably have been used. It may be the case that Calusa had two *s*-like spirants, a dental *s* and a pre-palatal *š*; only the examination of data beyond that looked at here may resolve the problem. If so, the consonant inventory of Calusa would match that of Tunica yet closer.

The Proto-Tunica inventory given above was suggested by the following regular Tunica-Calusa sound correspondences. The Tunica is given first. Symbols in parentheses in the Tunica examples are lost at morpheme and word borders; form-final symbols in parentheses in the Calusa examples are also lost at morpheme and word boundaries, while other parenthetical symbols are presumed to be present on the basis of Fontaneda's orthography, discussed later in the paper.

- p* : -*p* Tun. *tépi* join, *káhpá* assemble, *šíhpú* impale; Cal. *tepe* join, *ku(h)pe* - *kuNpe* assemble, *š(i)h)pi* harpoon
- t* : *t* Tun. *tépi* join, *lótá* run, -*štʔ* very much; Cal. *tepe* join, *lete* run, -*st(?)a* very much
- ʔ : ʔ Tun. *ʔúk(i)* settle; Cal. *(?)uk(i)* settle
- k* : *k* Tun. *ká-* this, *kičá* destroy, *ʔúk(i)* settle, *náka* war, *yáka* bring, *káhpá* assemble, *šáhka* tree, -*ki* imperative; Cal. *ka-* the, *kuči* destroy, *(?)uk(i)* settle, *ñoka* war, *yaka* bring, *ku(h)pe* - *kuNpe* assemble, *ša(h)ka* tree, -*ka* imperative
- VčV : VčV Tun. *kičá* destroy; Cal. *kuči* destroy (V = any vowel)
- s* : *š* Tun. *séha* examine; Cal. *še(h)(a)* examine
- š : š Tun. *šíhpú* impale, *wš(i)* water; Cal. *š(i)h)pi* harpoon, *(?)eš(i)* water
- hC* : C Tun. *šáhka* tree, *šíhpú* impale, *káhpá* assemble; Cal. *ša(h)ka* tree, *š(i)h)pi* harpoon, *ku(h)pe* - *kuNpe* assemble (C = any consonant)
- h* (before *i*, *e*, *ε*) : *š* (before *l*, *e*) Tun. *héra* watch; Cal. *šer(a)* watch
- h* (before *a*, *o*, *u*) : *h* (before *a*, *o*, *u*) Tun. *huma-ra* fast; Cal. *homa* fast
- m* : *m* Tun. *máš(u)* make, *máyi* on the other side, *mi* over there, *huma(ra)* fast; Cal. *máš(u)* make, *mayai* on the other side, *mi* over there, *homa* fast
- n-* : *ñ-* Tun. *ná* come to rest, *náka* war; Cal. *ño* village, *ñoka* war
- l* : *l* Tun. -*lu* tongue, *lótá* run; Cal. *lo* - *lu* tongue, *lete* run
- r* : *r* Tun. *rá* firm, *r(i)* house, *héra* watch; Cal. *r(a)* fierce, *r(i)* house, *šer(a)* watch
- w* : *w* Tun. *wáha* cry, *wáka* command; Cal. *wa(h)(a)* cry, *waka* command
- y* : *y* Tun. *yáka* bring, *máyi* on the other side; Cal. *yaka* bring, *mayai* on the other side

Vowel correspondences are somewhat more complex but nonetheless regular. Tunica stressed vowels, indicated by an acute accent ( ' ) over the vowel, have the following correspondences in the Calusa data:

<i>i</i> :	<i>i</i>	Tun. <i>ś(i)</i> brave, <i>r(i)</i> house, <i>-hčl</i> fem. sg., <i>mí</i> over there, <i>śihpu</i> impale; Cal. <i>ś(i)</i> brave, <i>r(i)</i> house, <i>-ki</i> fem. sg., <i>-mi</i> over there, <i>śi(h)pi</i> harpoon
<i>é</i> :	<i>e</i>	Tun. <i>tépi</i> join, <i>té-</i> all around; Cal. <i>tepe</i> join, <i>te-</i> all around
<i>é</i> :	<i>e</i>	Tun. <i>séha</i> examine; Cal. <i>še(h)(a)</i> examine
<i>d</i> :	<i>a</i>	Tun. <i>ká-</i> this, <i>rá</i> firm, <i>yáka</i> bring, <i>wáha</i> cry, <i>śáhka</i> tree, <i>más(u)</i> make, <i>máyi</i> on the other side; Cal. <i>ka-</i> the, <i>r(a)</i> fierce, <i>yaka</i> bring, <i>wa(h)(a)</i> cry, <i>śa(h)ka</i> tree, <i>mas(u)</i> make, <i>mayai</i> on the other side
<i>ú</i> :	<i>u</i>	Tun. <i>kičá</i> destroy, <i>úk(i)</i> settle, <i>kúhpa</i> assemble; Cal. <i>kuči</i> destroy, <i>(l)uk(i)</i> settle, <i>ku(h)pe</i> ~ <i>kuNpe</i> assemble
<i>ó</i> :	?	No Calusa examples
<i>o</i> :	?	No Calusa examples

When the Tunica stressed vowel is preceded by continuants *h*, *n*, *w*, or *l*, however, a different pattern occurs. In this pattern Tunica high stressed vowels *i* and *ú* correspond to Calusa mid vowels *e* and *o* respectively, Tunica stressed low central vowel *d* corresponds to Calusa low back vowel *o*, and all other Tunica stressed vowels for which we have data correspond to Calusa mid front vowel *e*:

<i>i</i> :	<i>e</i>	Tun. <i>wíš(i)</i> water; Cal. <i>(l)es(i)</i> water
<i>é</i> :	?	No Calusa examples
<i>é</i> :	<i>e</i>	Tun. <i>héra</i> watch; Cal. <i>šer(a)</i> watch
<i>d</i> :	<i>o</i>	Tun. <i>náka</i> war; Cal. <i>noka</i> war
<i>ú</i> :	<i>o</i>	Tun. <i>-lí</i> tongue, <i>húma(ra)</i> fast; Cal. <i>lo</i> - <i>lu</i> tongue, <i>homa</i> fast
<i>ó</i> :	?	No Calusa examples
<i>o</i> :	<i>e</i>	Tun. <i>lśta</i> run; Cal. <i>lete</i> run

Although there are recurring correspondences between unstressed Tunica vowels and Calusa vowels, the data-base is simply too small to suggest an overall pattern in any detail except to note that as in the above pattern there is a tendency for Tunica unstressed vowels to appear in Calusa as *e* — for example, Tun. *tépi*, *kúhpa*, *lśta*; Calusa *tepe*, *ku(h)pe* ~ *kuNpe*, *lete*; and to say that Tunica form-final *ε* corresponds to Calusa form-final *a*, as in Tun. *-štε*, Calusa *-st(l)a*.

Reflexes of the Proto-Tunica phonemes in Tunica and Calusa may therefore be summarized as follows. Alterations of these basic reflexes as a result of the application of Tunica and Calusa sandhi rules in the process of morpheme and word combination are discussed later in the paper.

PT * <i>p</i>	>	Tun. <i>p</i>	Cal. <i>p</i>
PT * <i>t</i>	>	Tun. <i>t</i>	Cal. <i>t</i>
PT * <i>k</i>	>	Tun. <i>k</i>	Cal. <i>k</i>
PT * <i>?</i>	>	Tun. <i>?</i>	Cal. <i>?</i>

PT *s	>	Tun. s	Cal. s
PT *ʃ	>	Tun. ʃ	Cal. ʃ
PT *h	>	Tun. h	Cal. h (before non-front vowels), ʃ (before front vowels), ∅ (before consonants?)
PT *m	>	Tun. m	Cal. m
PT *n	>	Tun. n	Cal. n
PT *ñ	>	Tun. ñ	Cal. ñ
PT *l	>	Tun. l	Cal. l
PT *w	>	Tun. w	Cal. y
PT *y	>	Tun. y	Cal. y
PT *i	>	Tun. i	Cal. i
PT *e	>	Tun. e	Cal. e
PT *ɛ	>	Tun. ɛ	Cal. a (when form-final), e (elsewhere)
PT *a	>	Tun. a	Cal. o (after ñ), a (elsewhere)
PT *u	>	Tun. u	Cal. o (after h, n, w, and l), u (elsewhere)
PT *o	>	Tun. o	Cal. o
PT *ɔ	>	Tun. ɔ	Cal. e (after h, n, w, and l) o (elsewhere)

### Calusa-Tunica Morpheme Comparisons

Morphemes occurring in the dozen translated Calusa forms and their Tunica analogs are given below with the reconstructed Proto-Tunica forms. Tunica morphemes and their glosses are taken from Haas (1953). Specific allophonic and reflex detail is discussed following the table. Vowels lost at morpheme and word boundaries by sandhi rule are placed in parentheses. Consonants *h* and *ʔ* in parentheses in the CALUSA B column are not orthographically attested and may or may not have been present. They are, however, implied by the Tunica form and by Calusa sandhi rules. It may be that the forms with (*h*) represent an earlier stage of Calusa, the forms without *h* the historically attested 16th century stage; for this reason a CALUSA A column of starred forms has been added to the table (at the suggestion of Dale Nicklas, personal communication). The ... notation indicates that the Proto-Tunica vowel can not be reconstructed from the available data.

PROTO-TUNICA	CALUSA A	CALUSA B	TUNICA	GLOSS
*-hki - *-hči	*-hki	-(h)ki	-hči	fem. sg. noun
*-k...		-ka	-ki	imperative verb
*-mi		-mi	mi-, -mí	over there, yonder

*-šlʔe		-šlʔa	-šlʔe	very much
*ka-		ka-	ká-	this (noun designator)
*te-		te-	té-	all around, about
*héra		šer(a)	héra	watch (over, for), guard, wait
*huma		homa	húma-ra	fast, prayer (noun) (húma = berry)
*kuč...		kuči	kúča	destroy, crush, mash
*kunpa ([kuNpa] > kuhpa ?)	*kuhpe - kuNpe	kupe - kunpe	kúhpa	assemble, gather together
*ʔuki		(ʔ)uk(i)	ʔúk(i)	settle, camp dwell, sit (down), stay, remain
*ʔota		lete	ʔóta	run
*lu		-lo - -lu	'-lu	tongue(d), language
*mašu		maš(u)	mášu	make, build
*may...		mayai	máyi	on the other side
*ña		ño	ná	come to rest, stop, lie down
*ñaka		ñoaka	náka	war, warrior
*po - pe *wo - we		we	pó	look, find, see, watch
*ra		r(a)	rá	firm, hard, strong
*ri		r(i)	r(i)	house, home, dwelling, building
*šahka	*šahka	ša(h)ka	-šáhka	tree, branch, wood
*sɛha		še(h)(a)	séha	examine, look at
*ši		-š(i)	-š(i)	brave, bold

* <i>sihpu</i>	* <i>sihpi</i>	<i>si(h)pi</i>	<i>sihpu</i>	stick, impale, harpoon
* <i>tahta</i>	* <i>tahte</i>	<i>ta(h)te</i>	<i>táhta</i>	prairie
* <i>tepi</i>		<i>-tepe</i>	<i>-tépi</i>	join, connect
* <i>waha</i>		<i>wa(h)(a)</i>	<i>wáha</i>	cry, weep
* <i>wiši</i> - ?... <i>ši</i>		( <i>l</i> ) <i>es(i)</i>	<i>wíš(i)</i>	water, liquid
* <i>yaka</i>		<i>yaka</i>	<i>yáka</i>	bring, arrive

Tunica *l*, *m*, *n*, *r*, *w*, and *y* have voiceless allophones before voiceless sounds (Haas 1946:339). Thus Proto-Tunica \**kunpa* would expectedly be actualized as [*kúNpa*] in Tunica. In other Lower Mississippi Valley languages such as Natchez and Chitimacha voiceless resonants may become or vary with *h* (T. Dale Nicklas, personal communication). Thus early Tunica \**[kúNpa]* > or - [*kúhpa*]. Both *ku(h)pe* and *kunpe* occur in Calusa, though we do not know whether the *n* was voiced or voiceless. Proto-Tunica \**n̄* becomes Tunica *n*. There is insufficient data to say whether historic Tunica stress was inherited from the proto-language or was an innovation.

Proto-Tunica to Calusa sound changes are more numerous:

PT \**h* > *ś* before front vowels — PT \**héra* > Cal. *śera*, Tun. *héra*;

PT \**h* may or may not have been lost in historical Calusa, as discussed above;

PT \**š* and \**s* merge as Cal. *ś* — PT \**séha* > Cal. *śeha*, Tun. *séha*, PT \**sihpu* > Cal. *śi(h)pi*, Tun. *sihpu*;

PT \**ε* > Cal. *-a* — PT \**-stʔε* > Cal. *-stʔa*, Tun. *-stʔε*;

PT \**u* > Cal. *o* after *h*, *n*, *w*, and *l* — PT. \**huma* > Cal. *homa*, Tun. *húma* (though also note PT \**lu* > Cal. *-lo* - *-lu*, Tun. *-lu* as in Calusa Carlos - Calus);

PT \**a* > Cal. *o* after *n̄* — PT \**n̄aka* > Cal. *n̄oka*, Tun. *náka*;

PT \**ɔ* > Cal. *e* after *h*, *n*, *w*, and *l* — PT \**l̄ota* > Cal. *lete*, Tun. *lota*.

Additionally the second vowel of disyllabic forms in Calusa is reduced, so that:

PT \**a* > Cal. *e*, PT \**i* > Cal. *e*, and PT \**u* > Cal. *i* — PT \**tahta* > Cal. *ta(h)te*, Tun. *táhta*,

PT \**tepi* > Cal. *tepe*, Tun. *tépi*, PT \**sihpu* > Cal. *śi(h)pi*, Tun. *sihpu*.

As Dale Nicklas has pointed out (personal communication), unstressed vowel reduction in Calusa may be more apparent than real, inasmuch as such vowels are frequently not attested as a result of the operation of the sandhi rules. However, Tunica has, for example a number of pairs of related forms one of which ends in *u*, the other in *i* — for example, *kári* - *káru* "to split, crack" (Haas 1953:222), or *a* and *i* — for example, *máhkina* - *máhkini* "deep" (Haas 1953:234).

With regard to the morpheme pair PT \**po* - *pe*/\**wo* - *we*, it should be noted that Tunica has



a number of related active verb stem-pairs in which one begins in *w*, the other in *p* — such as *wáka* "to order, command", *páka* "to answer, respond" (Haas 1953:243, 273), or *wóhku* "to cover with a lid", *póhku* "to cover over" (Haas 1953:178). The second stem is reflected in the Natchez stem *peh-* "to cover". The first stem-pair is reflected in Calusa by the alternate forms of the name **Tocobaga** *tokowaka* ~ **Tocopaca** *tokopaka*. The same phenomenon may be seen in the Calusa equivalent of the Tunica active stem "to look, watch" *pó*, which appears as *we* in Calusa *tejiEue teše(h)we* "watchtower". The correspondence of Tunica *o* with Calusa *e* in the above example is also of interest, since word pairs showing such variation occur in Tunica — *kéhčá* "to bite" and *kóhču* "to devour" (Haas 1953:178).

There is only a single morpheme constituent in the dozen attested South Florida translated lexemes which is distinctly Muskogean; namely, the ending *-cola* on the tribal name **Cañogacola**. This frequently occurring ending in Florida place names — Apalachicola, Pensacola, and others — has traditionally been considered to be a metathesized form of Choctaw *okla* "town, people" (cf. Swanton 1952:104, 136). Dale Nicklas (personal communication) has pointed out that the cognate Alabama and Koasati form is *o'la*, which is also the form, unattested, one would expect in the closely related Apalachee language. Nicklas has also suggested the possibility that the form may represent the Alabama-Koasati-Apalachee suffix *-ka* — indicator of a word of foreign origin ending in a sound combination not normal to those languages (cf. Kimball 1991:474-475; Sylestine, Hardy, and Montler 1993:697), followed by the morpheme *o'la* "town, people". Such a combination would then predictably become *-ko'la* through usual Muskogean sandhi rules.

### Calusa Morphophonemic Processes and Their Tunica Analogs

Though others probably existed, from the available data it is possible to define only one morphophonemic change in Calusa. In all cases the change is one of vowel loss. When it involves the loss of a base-final vowel before a grammatical suffix in the formation of a single word (internal sandhi), it may be referred to as syncope; when it involves the loss of a word-final vowel before another in-phrase word, it may be referred to as apocope (external sandhi). Since both syncope and apocope affect identical structures, a single sandhi rule can be formulated:

In base forms, but not affixes, ending in *-ha* or *-ra* the final *a* vowel is lost immediately before a grammatical suffix or another base which begins in a consonant, whether the base occurs as the second part of a compound word or as a separate word in-phrase with the first word. Under the same conditions base forms, but not affixes, ending in *-ki*, *-ri*, *-ši*, or *-šu* lose their final vowel.

It should be pointed out as a corollary that it is this rule which enables the inclusion of glottal stop *ʔ* in the Calusa phoneme inventory. In the word **Guarugu(n)be** "Village of Tears" the second and third morphemes are *-ri* "house" and *ʔuki-* "settlement". By the sandhi rule above the final *i* vowels of both morphemes would be lost, giving *-rʔuk-* (*-rug-*), which is what actually occurs. If the morpheme meaning "settlement" did not begin in a consonant, however, the sandhi

rule would not apply, and the *i* of morpheme *-ri* "house" would remain in place, giving orthographic *-riug-* or, more likely, *-riyug-*. Since all other attested Calusa morphemes begin with a consonant, as do all base and most affix morphemes in Tunica, and since the cognate Tunica morpheme for "settlement" is *ʔúki*, glottal stop *ʔ* is postulated for Calusa.

Tunica analogs to the Calusa sandhi rule are:

(1) Word-internally a vowel in an unstressed syllable which stands before a *ʔ* is regularly syncopated — *ʔáka* "to enter" + *ʔúhki* "he did" > *ʔákʔuhki* "he entered" (Haas 1946:343);

(2) Word-internally stems ending in *-hki*, *-ši*, *-ni*, *-li*, or *-ri* (unless they have a stressed penult) may non-obligatorily syncopate the *i* when they come before a grammatical suffix beginning in a consonant — *ʔákačéhkini* "pot" + *-iʔe* augmentative suffix > *ʔákačéhkiniʔe* "a large pot" (Haas 1946:343);

(3) Word-final *-hki*, *-hka*, *-ši*, *-ni*, *li*, or *-ri* (unless they have a stressed penult) usually but not always apococate the *i* or *u* when followed by another word in the same phrase — *šikuri* "knife + *čúwihč* "when he took" > *šikurčúwihč* "when he took a knife" (Haas 1946:345), but also *táwíšihči* "the water" (Haas 1946:359).

The similarities of the morphophonemic processes as well as the phonological units involved and the morphemic environments are obvious.

### The Source Orthography of Calusa Forms

The orthographic and spelling conventions of 16th and 17th century Spanish are quite well known (Spaulding 1948, Entwistle 1942), and the transcription of Fontaneda's rendition of Calusa forms is therefore relatively straight forward: *VbV*, *VvV*, *gua* = [VwV]; *c* (before *a*, *o*, *u*), *VgV*, and *qu* or *gu* (before *e*, *i*) = [k] (Haas 1953:346); *c* (before *e*, *i*), *s*, *ji* = [s] (but see the earlier discussion on the phoneme *š*); *ch* = [č]; *f* = [f]; *g* (before *a*, *o*, *u*) = [g]; *h* = [h]; *ji* = [š] (see the earlier discussion on this phoneme); *l* = [l]; *m* = [m]; *n* = [n]; *ñ* = [ɲ]; *p* = [p]; *r* = [r]; *t* = [t]; *y* = [y]; *a* = [a]; *e* = [e]; *i* = [i]; *o* = [o]; *u* = [u]. There are no conventions in the Spanish orthography of the period for the representation of the glottal stop [ʔ], [hC], doubled consonants [C,C<sub>1</sub>], or voiceless nasals such as [N] — these phonological phenomena, while occasionally occurring in some Spanish dialects of the period, were non-phonemic. Arguments have already been presented for the presence of such phenomena in Calusa.

### Table of Source Forms and Their Analysis

With the above analytical data it is possible to look at the dozen translated South Florida language forms and trace the suggested etymologies step-by-step. Some are, of course, more certain than others, but all reinforce the suggestion that historically attested Calusa was a Tunican

language.

FORM, MORPHEMES, AND GLOSSES	SANDHI RULE	FINAL SPOKEN FORM	TUNICA SYNTACTIC ANALOG	ATTESTED FORM AND GLOSS
<i>ka + ñoka + kola</i> the + war + people	No	<i>kañokakola</i> The War People	<i>(tá)nakačoha</i> (the) War Chief (Haas 1953:239)	<b>Cañogacola</b> gente bellaca Warlike People
<i>ka + r(a) + -lo + š(i)</i> the + firm + tongued + brave  <i>ka + -lu + š(i)</i> the + tongued + brave	Yes	<i>karloš - kalus</i> The Firm, Brave Tongued Ones - The Brave Tongued Ones	<i>tárku</i> the firm thing = tree (- <i>ku</i> masc. sg.) (Haas 1953:249); <i>ʔónrowa</i> < <i>ʔón(i)</i> person + <i>ršwa</i> white = white man (Haas 1946:360)	<b>Carlos (- Calus)</b> pueblo feros Fierce People
<i>šer(a) + -tepe</i> watch + join	Yes	<i>šertepe</i> The Joining Watchman	<i>táhera</i> The Boss, Watchman (Tunica title) (Haas 1953:214) <i>ʔatépi</i> together + joined = connected (Haas 1953:267)	<b>Certepe</b> rey mayor y gran señor Chief King and Great Lord
<i>kuči + yaka</i> destroy + bring	No	<i>kučiyaka</i> Bring to Destruction	<i>lšta wíwánan</i> run + want = want to run (Haas 1946:362)	<b>Cuchi(y)aga</b> lugar amartirisado Place of Martyr-dom

<i>wah(a) + r(i) + ʔuk(i) + kuhpe ~ kunpe</i> weep + house(s) + settle + assemble	Yes	<i>wahrʔukkuhpe - wahrʔukkunpe</i> [The] Weeping Assembled Settlement of Houses		Guarugu(n)be pueblo de llantos Village of Tears
<i>wah(a) + sahka &amp; ʔeš + -hki</i> weep + tree & water + fem. sg. noun	Yes	<i>wahsahka ʔešhki</i> Weeping Trees Water	<i>táwišihči</i> the water (Haas 1946: 359); <i>čúhkišáhka</i> gray oak (Haas 1953:258)	Guasaca Esgui Rio de Cañas River of Reeds
<i>maš(u) + homa</i> build + fast (= pray)	Yes NOTE: Symbol h = [šh] ?	<i>mašhoma</i> House of Prayer		Mahoma casa de Mahoma House of Prayer
<i>mayai + -mi</i> on the other side + over there	No	<i>mayaimi</i> The Other Side NOTE: By semantic extension = "Large" (?)	<i>máyih̄ta</i> to the other side; - <i>mih̄ta</i> beyond (Haas 1953:235-236)	Mayaimi porques muy grande "because it is very large"
<i>ño</i> come to rest	No	<i>ño</i> Settlement		Ño pueblo querido Beloved Town
<i>seh(a) + lete + -ka</i> examine + run + imperative	Yes	<i>sehleteka</i> Run look NOTE: Fontaneda states that "the Florida natives abbreviate their words more than we do (Fontaneda 1945:73)	<i>l̄sta wiwánan</i> run + want = want to run	seletega Corre mira si viene jente Run see if people are coming
<i>šihpi</i> harpoon	No	<i>šihpi</i> Harpoon		sipi [image of a barracuda crossed by a harpoon]

<i>te- + šeh(a) + we</i> all around + examine + look	Yes	<i>tešehwe</i> Look [and] Examine All Around	<i>táséhapó</i> the + examine + look = "looking glass" (Haas 1953:256)	<i>tejiEue</i> miradero Watchtower
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### Extension of the Analysis

If the preceding assumptions are valid, it should be possible to extend them to at least some of the untranslated Calusa words given by Fontaneda, all toponyms, to yield plausible results and possibly additional analytical data. Two examples are provided here:

(1) Documentary evidence led John R. Swanton (1952:126) to position Fontaneda's *Tatesta* (Fontaneda 1945:70) south of the *Tequesta* in the present Miami area and approximately 80 leagues north of *Cuchiyaga* (probably Big Pine Key). This would imply that *Tatesta* was located on the southeast mainland not too far north of Key Largo. Given the present analysis, the name is easy to translate, for there are Tunica forms *táhta* "prairie", and *-štʔe* "very much" (Haas 1953:265, 302), yielding "Many Prairies", a not inaccurate description of the southeastern Everglades. The Calusa phonological correspondences and sandhi rule discussed earlier would predictably yield Calusa *Tatesta ta(h)te + štʔ(ʔ)a* from Tunica *táhta + štʔe*. Tunica *-štʔe* "very much" — as in *šišʔe* "very brave" (Haas 1953:259) — comes from the *-ša* intensive postfix + the *-ʔe* augmentative suffix (Haas 1953: 301, 302), and there is a close Tunica analog in the lexeme *táhtatʔe* "Great Prairie" (Haas 1953:264).

(2) The ruler of the Tampa Bay region was called *Tocobaga chile tokowaka éile* (Fontaneda 1945:69). The title means "You are the Tocobaga", *chile* being a Timucua word with the meaning "you are" (Granberry 1993:91), apparently borrowed in at least the context of this tribal rank. The title *táwaka*, meaning "He Who (*tá-* the definite article) Commands (*wáka*)", was used by the historic Tunica to refer to a class of leader (Haas 1953:273, 302). We have already seen that the Calusa stem for "town, camp, settlement" was *ʔuk(i)*. A "town/settlement commander" would therefore have been called *taʔuk(i)waka*, with or without the vowel *i*, in Southwest Florida Calusa. From there to *Tocobaga* is a short step, with a second, *ʔoko*, form of the "town, camp, settlement" stem, yielding *t- + ʔoko + waka*, which conforms to the sandhi rule described earlier, the last *o* vowel of *ʔoko* not being subject to the vowel-loss rule affecting *i*, *u*, and *a*.

The initial *t-* morpheme of *Tocobaga* is identical with the Tunica noun-designating article prefix *ta-*, which takes the form *t-* before stems beginning in *r* or *ʔ* with consequent loss of stem-initial *ʔ* (Haas 1946:357), and here seems to be used in place of the more usual Calusa noun-designating article prefix *ka-*, which survives in later Tunica only in frozen form as part of a number of demonstratives — *káku* "who", *kánaḥku* "what", *káta* "where", *káʔas* "when" (Haas

1953:220-221).

Fontaneda's phrase "Your are the Tocobaga" would therefore more literally mean "You are the one who commands the town."

### Conclusions

That 16th century Calusa forms show such a close correspondence with 20th century Tunica forms suggests either that the Calusa language for which we have documentary records was a relative late-comer to Florida — for daughter languages from a single parent would be expected to exhibit considerably more change than is evident in our data — or that Calusa contact with the Lower Mississippi Valley Tunican homeland was ongoing over a long period of time. The relationship between 16th century Calusa and Lower Mississippi Tunican was, in any case, a very close one. Archaeological data, examined in a forthcoming paper, tends to substantiate the latter assumption. Examination of the full corpus of Calusa toponyms for additional data is clearly called for, as is an examination of Calusa lexemes which are reported to have survived among the Florida Mikasuki in ceremonial contexts (personal communication from Sakim, a Florida Creek informant).

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