

UNIVERSIDAD DE QUINTANA ROO

División de Ciencias Políticas y Humanidades



English-Spanish Translation of Texts

Describing Past and Present Important Local

Trees with a Detailed Analysis of

all the Techniques Employed



Trabajo monográfico para obtener el grado de

LICENCIADO EN LENGUA INGLESA



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Chetumal, Quintana Roo, octubre, 2010.

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Trabajo Monográfico elaborado por **Luis E. González Dodd**
y **aprobado** como requisito para obtener el grado de:

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ABSTRACT

English-Spanish Translation of Texts Describing Past and Present Important Trees with a Detailed Analysis of all the Techniques Employed

Key words: Mayan, Costa Maya, Mexico, tropical trees, environment, biological research, eco-tourism, outdoor education, local tour guides training and empowerment, English-Spanish, TBLT (Task-Based Language Teaching) approach, translation techniques, University of Texas Press, Universidad de Quintana Roo.

Vivid descriptions of today's important endemic trees found throughout the Mayan world providing a fresh synthesis of anthropological and biological research for each one of the three selected, will be found in this work. The vocabulary also involves those fields of knowledge concerning Mayan history, biology, botany, anthropology, cosmogony and arts.

A detailed theoretical analysis of applied techniques, methods, procedures and strategies involved in the translation process are provided, each one corresponding to a certain degree of complexity which allows professional translators strict control over the reliability of their work.

Knowledge about trees is important for people because there is a regional economic boom. The new cruise ship port *Grand Costa Maya* demands well informed and trained Spanish and English speaking tour guides and information providers. Therefore, bringing these chosen texts into the TL (Target Language) and focusing on form fitting into a task-based instructional cycle will serve as an engaging and practical paradigm and resource for burgeoning local tour guides, university & graduate students -from the fields of tourism, natural resources and anthropology- eager to learn accurate, interesting information to tell visitors and tourists. Chosen descriptions are written in a contemporary American Standard English easily digestible by local people. These texts depict great ancient stories supported by the author's keen eye which provides an insight acquired partly by working and travelling in the Mayan world for many years. Also with the guidance of Stanford University's Tropical Research Program, and a deep interest in being a conservationist, outdoor educator, and writer.

Acknowledgments

Gracias a aquellos que con su amor me quitaron tanto tiempo en su dedicación para transformarme; como siempre, están todos perdonados por distraerme así pues con ese importante apoyo me hicieron enfrentar este desafío para convertirlo en exitoso.

Gracias, lengua inglesa. Contar contigo me reconforta casi tanto como el amor de mi esposa, casi tanto como la fibra de mi linaje y de mi estirpe, y casi tanto como la solidaridad de mis amigos; a todos ellos dedico este humilde esfuerzo y doy también las gracias por su perenne estímulo, apoyo y ejemplo. Hoy, mediante esta universidad, titulas mi licencia como intérprete, traductor y catedrático profesional, me provocas tanta pasión como pocas cosas en la vida. Hoy eres más real por ser más mía.

Como no le voy a agradecer a esa lengua, si la siento como mía, si por décadas la he tenido de aliada en momentos de gran disfrute y de un profundo e inmenso placer, por servirme de vehículo, como la *prima lingua* mía, sustento innegable siempre presente, generadora de calidad de vida. Pero la inglesa, esa lengua..., gran compañera de viajes y aventuras, creadora de amistades adorables que sin ella, sin su presencia en mi vida, otra cosa hubiera sido y sería. Más la exploro mayor el placer por conocer muchos de sus recónditos nórdicos secretos, rincones irlandeses, matices sajones o caucásicos, francesas texturas, melodías hindúes y caribeñas que cuando mi cuerpo y mente la perciben, la reciben, y mi boca o mi diestra mano con su actuar me reafirman que mientras más la exploro, más la sufro para descifrarla, más la gozo y más la quiero siempre más mía. Este sentimiento por esta lengua nunca mengua, más bien se intensifica..., siempre ha sido así.

Por supuesto agradezco enormemente a aquellos profesores y supervisores de este trabajo que por su saber acerca de **esta lengua** y su capacidad de hacerla cautivante al expresarse me motivaron a aprender de ella: una palabra, un sinónimo, un sonido, un significado, un registro, un contexto, un propósito, un matiz, una anécdota, una frase idiomática, o una regla de redacción para también narrar y recrear con ella y en ella, historias en inglés que fascinen. Un agradecimiento especial para el profesor Peter Calbrough, madre lengua inglesa, quien con su innata dedicación revisó la redacción realizada en inglés para esta monografía y me aportó un entendimiento adicional invaluable de su lengua y su cultura.

Introduction

Shelter, clothes and food have been supplied by nature to Mesoamericans for at least five thousand years through the three selected trees here today for this project: Cohune palm, Ceiba tree, and Breadnut. The first provided the thatch, the kernels, the cooking and lamp oil; the second, Ceiba, center of the universe, cosmic tree, the spiritual inspiration linking heaven with the earthly and mundane world, and the Netherland. This ceiba tree also provided from its flowers the fiber for fine rayon-like white garments rulers wore back then. The third, Breadnut, provided with its fruit the protein to complement their diet and with the abundant foliage, the food for their domesticated animals. This tree selection comes from a book in a travel guide format written by a dedicated environmentalist and outdoor educator who travelled extensively and connected with people and nature in the Mayan world.

The role of trees in Ecological studies has gained importance and studies of cultural groups such as the Maya have also come to the forefront. The Mayan pyramid located at Chichen Itzá, Yucatan, our neighbor State, holds the title of New Wonder of the World. Soon, in the year 2012, the Mesoamerican and Mayan calendars end another galactic cycle. Many expectations bring to the region visitors eager to learn something new; therefore, regional economic development in this State is aimed at international tourism –mainly from Belize (the only Latin-American

English speaking country), the U.S. and Canada. Great job opportunities in this municipality arise for bilingual local guides who can and have to render interesting facts in English.

In the chain of events just described, through my years of experience as a translator, interpreter, tour guide, business escort, and scientific research logistics facilitator, I could always perceive there is a missing link: real stories and interesting facts to tell visitors in their own language, or at least, if not possible in other languages or in English or in Spanish. This vision was strongly supported with the impact of hurricane Dean on September, 2007 where, once again, the urgency for accurate and updated information in Spanish was of paramount importance when deciding which trees to choose for reforestation. First the list and then the norm were published, of course, in Spanish. Preference for endemic trees was one of the criteria and with it, the preservation of history. This is why the translator decided, within the context of international relations and openness to sharing our natural resources with world visitors, to use the book *Animals & Plants of the Ancient Maya. A Guide*, Schlesinger (2001), from which these descriptions today have been translated. Its texts and black ink drawings caught my eye since I first saw them, not only for their practicality and usefulness but for its author's understanding and appreciation of the linkages between this ancient culture's activities and the environment. As an outdoor educator Victoria Schlesinger

masterly explains the central role that plants and animals played in Mayan culture. She describes how “the massive ceiba tree was at the center of their cosmogony, linking the dark Netherlands or underworld, and why jaguars symbolized the power of nature and the divine right of kings to rule”. A real jewel –as learning material- for us here.

With the hurricane “*Dean*” a distinctive opportunity had come my way. These tragic events sparked this idea of producing texts to be in both languages used by ESL (English as a Second Language) teachers, local trainee guides, students and researchers, to inform people of the world in their short visit about the usefulness of different trees today, a heritage carried forward since the times of the ancient Maya. I had found the link which closes this circle: vivid descriptions of endemic trees in the Mayan world which provide a fresh synthesis of anthropological and biological research; they are ideal for training bilingual local tour guides who are in high demand at the cruise port in the Costa Maya region, second in importance in the country and also for catering to Spanish-speaking visitors. The rise in local employment due to touristic activities throughout the South of Quintana Roo must parallel the empowerment of local people. Here in this work, the translator humbly contributes by translating sample material of the trees’ descriptions for TESL. For local guides these translations are of the greatest importance to help alleviate the

economic pressure felt in the face of recent local, state, national and world events affected by pandemics and economic depression.

Furthermore, natural resources and forest conservation, reforestation and oxygen production cover the headlines in mass media in all corners of the world. Deforestation, fires, floods, hurricanes, plagues and diseases are also an everyday threat for many trees throughout the globe. The Yucatan Peninsula with its enormous variety of endemic trees has served for millennia as an important part of the world's lungs to produce oxygen for cleaning up our precious environment. Its forest has hosted half of the reptiles, half of the birds, a third of the mammals of the world since ancient times. This tropical forest is in many ways a world class forest. Mesoamerican tribes have populated this area for more than twelve thousand years depending on the forest which played a crucial role for their development by providing food, shelter, wealth, treasures and magical myths. Today many people want to learn about these aspects and they come to visit with this in mind.

These woods, the bark, flowers, saps, seeds, leaves, roots, fruits have become subjects of interest, on the one hand for many merchants around the globe, and on the other, by curious travelers, researchers, media experts and nature lovers.

History and today's actions show that future economic strategy development plans are counting on hordes of world visitors in the whole Yucatan Peninsula

where our state of Quintana Roo is located. This State is the only one with Caribbean waters in the whole country, with around 800 kilometers or 500 miles of coasts, which welcome millions of tourists from all walks of life and all corners of the world. In their short visit they are very interested in acquiring knowledge of endemic species of trees and the ancient Maya, and of course of other components of local nature so they can tell their friends and family members back home about their memorable experience, so others may come some day. The only condition they demand in a very clear fashion is that they want to hear the descriptions in their own language!

With these aspects of interest in mind and the newly created need (in the last decade) for having professional, well trained local tour guides, this research and translation have come about. These local tour guides who are getting trained as you read, who will cater to domestic and international tourism, use or will use English as a means to render a descriptive concise explanation of whatever they are explaining at an English level of an average high school graduate in the U.S.A. Once again, over 90 percent of foreign tourists come from Belize, the USA and Canada. Therefore, the main goal for English language acquisition by future bilingual tour guides is: great listening and speaking skills with the type of vocabulary, spelling, style, level, register and spirit of North American English; the

book where today's translated texts have been chosen from is already offering to its English speaking audience lots of examples of what they want.

Of course there have been many descriptions of these trees in the Yucatan Peninsula in many languages for many years (see bibliography at the end), but a region-specific description in American English describing each tree's habitat and natural history, identifying characteristics and cultural significance to the ancient and contemporary Maya of those varieties still found today after thousands and thousands of years, was for a long time a treasure to be found. As mentioned before, the explanation in the source text is written in English delivered in an interesting fashion so listeners/travelers can take back home a significant experience out of their tour while in the south of Quintana Roo.

With great pleasure, I give credit to this excellent book written by Victoria Schlesinger, *Animals & Plants of the Ancient Maya*, with black ink illustrations by M.C. Juan C. Chab-Medina, and published by the University of Texas Press (2001). It is a handy and invaluable tool for all those who are faced with very high expectations from (always) demanding, (not always) trained and (almost always) aggressive employers who expect full proficiency, accuracy, and command of the English language. Reading it sparked my interest to produce it in Spanish.

It is important to mention that in 2008 after taking *Métodos y Técnicas de Enseñanza del Inglés* class, where I learned about the TBLT (Task-Based

Language Teaching) method, I realized with no doubt that this translation could easily become a reliable bilingual prototype for further teaching materials created to teach and enable local people to learn using a contemporary communicative approach for competence development. At that time the idea of fitting this material into task-oriented courses crossed the translator's mind for the first time.

Therefore, bringing these chosen texts into the TL (Target Language) and focusing on fitting in to a task-based instructional cycle will serve as an engaging and practical paradigm and resource for burgeoning local tour guides, university & graduate students in the fields of tourism, natural resources and anthropology, who are eager to learn accurate, interesting information and stories to tell visitors and tourists.

Justification

Being a bilingual and bicultural tour guide myself for almost a decade now, I have shown this book to colleagues and entrepreneurs and always got a positive response and empathy for it. Furthermore, they encouraged me to translate it, so both versions, English and Spanish, could be used in the region as teaching materials. Therefore, in my opinion, these texts are the missing link between those visitors, tourists, scholars, researchers looking for fresh information in Spanish or in English, and those who have to render the information.

This translation work is produced for those whose use of English is vital for securing a job as trainers, service providers or tour guides; those who also have to give a concise and enjoyable explanation of all sorts of things related to our tropical forest, or to our cultural heritage and economic environment in understandable and articulated English. Having the information in Spanish as supporting material for learning reinforces learners self confidence. Local authorities and local leaders of federal programs like “Pueblos Mágicos” from the Ministry of Tourism are supporting this translation effort.

For the translator, the urge to learn this specific information in Spanish or English becomes very apparent, if nothing else, because it is one of the tools linking the language of today’s international traveler-visitor who desires to be in the presence of famous trees and other living characters that have had a long history

of permanence, up to this day, in our environment. We also have to take care of our domestic market of tourists. We have to take care and cater to Latin American, Caribbean, and Spanish visitors, and therefore, interesting Spanish texts are in great demand as well. So the informed tour guide has to be able to convey a coherent message so he or she can be understood by an average North American citizen --the main source of our regional tourist dollars-- or a Spanish-speaking person.

Trees here have become subjects of interest for their uniqueness, their global fame for existing diversity and the many uses given to them and their by products such as woods, resins and dyes. On the one hand: big profits dreams come true for many merchants and entrepreneurs around the globe, like modern buccaneers, taking advantage of our nature's wealth and beauty, up to this day, giving little in return; and on the other: curious scientists, travelers, researchers, media experts, and all those people interested in ancient Mayan culture.

There is no question that another accomplishment with this translation is that it plants the seed which will grow as a tangible support for local people, empowerment. The successful repercussions of this educational process will send a clear political message to local authorities so they continue raising funds for education and training, emphasizing the creation of bilingual local employment

opportunities to cater to Anglo-American and Belizean visitors, the main source of income in this municipality and this state.

I hope that this work will be welcomed by many as a practical example of translating important educational texts from English into Spanish so as to enrich the lives of those who risk reaching out for more knowledge to fulfill their innermost dreams.

Objectives

1. To complete the translation of three of the most popular descriptions of trees, as they appear in the aforementioned book. These will make the information accessible to every Spanish reader who could benefit from it, be it for translation studies, sketch preparation for tourist presentations, or educational purposes. In the process of this brief work I will focus only on a small but very characteristic family of trees. These are: Silk Cotton (Ceiba), Cohune Palm (Coroso), and Breadnut (Ramón).
2. To provide an accurate translation work that could serve as a reference material for others, broadening the horizons of all those wanting to increase their vocabulary and understanding of the English and Spanish languages in the fields of nature resources and conservancy, environmental education, ecological sustainability, anthropology, biology and tour guiding.
3. To serve as an example of my work to the author and to her editor, Texas University Press, so they may accept that I can translate the whole 350-page book. After achieving this, to lay down an important stepping stone in my world of translations and into the world of interpreting, translating, teaching and tour guiding, professions that I am passionate about.
4. To fulfill the expectations of local, municipal, state and federal authorities who have supported this translation work knowing the benefits it will bring to local people.

Theoretical Framework

Translation is a process in which a natural equivalent of a given message in a source language is produced, taking into account primarily the meaning of the message and then the linguistic style (Nida, 1959).

The meaning of the messages on which this project is based is considered, on the one hand as having a function which is referential or informative providing information about the facts and events of the real world, and on the other, a technical one, which employs specialized technical terminology. Francisco J. Angulo-Blanco (2009, p.18) explains in his monograph: “technical texts are those which are specialized to deal with a specific task on hand. They are oriented to different disciplines such as medicine, physics, astronomy, archeology and others”; this project is this kind of text. To conclude, the subject or source text (ST) for translation is a **technical text of informative function**.

Regarding the style, Finegan (2008, p.329) claimed that, “With all language, the situation of use is the *most* influential factor in determining linguistic form”. Here, another consideration has to be made regarding similarities and differences between spoken and written registers due to the fact that, “writing and speaking ordinarily serve different purposes and have distinct linguistic characteristics”, (Finegan, 2008, p. 327). As was previously mentioned, an important objective in this translation project is to use these descriptions to educate local people for face-

to face communication in both Spanish and English. Now, the fact that “in writing, much more must be communicated lexically and syntactically... written registers tend to be more formal, more informational, and less personal” (Finegan, 2008, p. 329). Therefore, those who use such descriptions for oral communication in either language can benefit from all the planning the author invested in composing and enriching with ample vocabulary each one of the descriptions; so participant **roles**, activity **purpose**, and **setting** will determine the vocabulary used in every speech situation. A TBLT (Task-Based Language Teaching) methodology applies well here.

Today, the uses of the already published and widely known **translation strategies** are exhaustive in defining the different **procedures** and concepts that describe both the methods and the levels of translation necessary to undertake this translation project.

Word-for-word translation consists of giving the first definition of words and keeping the original order of the words of the original message so that the target message remains closely linked to the language employed in the source message (Vinay and Darbelnet, 1958).

As for the chosen texts, not only the technical nature of their written descriptions allow for an accurate translation with effective results, but also the characteristics fit the guidelines of free and literal translation. Free translation is the one which addresses the reproduction of the general meaning of the message, no

matter if it does not fit with the form or organization of the original one (Pei and Gaynor, 1954). Literal translation, which is similar to word-for-word translation, has to do with the regularization of things syntactically. This kind of translation follows closely the form of the source language (Larson, 1984).

Now, the most commonly known translation techniques proposed by Paul Vinay and Jean Darbelnet (1958) will serve as the structure through which the objectives will be accomplished. All these techniques are employed at the three levels of expression which are lexis, syntactic structure, and message (Venuti, 2004). As always, these three levels acting simultaneously produce such a complex mixture of components in every sentence that two or more translation techniques have to be used at the same time; hence, an exhaustive analysis is of vital importance after finishing the translation. Thus, "this analysis could be expected to show evidence of some degree of adaptation of culture-specific connotative value in order to preserve the intended text impact" (Beeby et al., 2000, p.234). "...so that the overall impression is the same for the two messages" (Vinay and Darbelnet), that is for the S.T. (Source Text) and the T.T. (Target Text).

Generally speaking, translators can choose from two methods of translating, namely direct or literal translation and oblique translation. In the listing which follows, the first three procedures are direct and the other three oblique (Vinay and Darbelnet, 1958). Furthermore, the two last ones, for the sake of the target

audience, culture and language, are based in T.L. knowledge and pure common sense as explained in items “h” and “i”.

Examples for each technique or method are provided in the **Analysis** section (p. 36) right after the translation.

Translation techniques:

- a. **Borrowing:** Is the simplest of all techniques and it is used in order to introduce the flavor of the source language culture into the translation. Borrowing is used as a matter of style and is employed when a word is more suitable to be used or known in the target language. “It must be remembered that many borrowings enter a language through translation, just like semantic borrowings or *faux Amis*, whose pitfalls translators must carefully avoid” (Vinay and Darbelnet, 1958, p. 129). Example on page 37.

- b. **Calque:** A special kind of borrowing in which a language borrows an expression form of another and translates literally each of its elements” (Vinay and Darbelnet, 1958, p. 129). Example on p. 39.

- c. **Literal translation:** is the direct transfer of a message into a grammatically and idiomatically appropriate target language. With this technique, the translator

only observes the adherence to the linguistic servitudes of the target language (Vinay and Darbelnet, 1958, p. 130). Example on p. 40.

d. **Transposition:** Is the replacement of one word class with another without changing the meaning of the original message. Transposition also occurs within a language. Translators must choose to carry out a transposition if the obtained translation fits better into the expression, or allows a particular touch of style to be retained. The transposed form is generally more literary in character (Vinay and Darbelnet, 1958, p. 130). Example on p. 44.

e. **Modulation:** is a variation of the form of the message which is produced by a change of point of view. This change is justified when one translation results in an unsuitable, unidiomatic or awkward utterance even when it is grammatically correct. For Vinay and Darbelnet (1958) "...translators would only need to look up the appropriate translation under the entry corresponding to the situation identified by the SL [Source Language] message... if there were conceptual dictionaries with bilingual signifiers. But such dictionaries do not exist..." (Example on p. 46).

f. **Equivalence:** Consists of representing the same situation in two texts –source and target message- using completely different stylistic and structural methods.

In most cases equivalences are already fixed and belong to a phraseological collection of idioms, clichés, proverbs, and nominal or adjectival phrases (Vinay and Darbelnet, 1958, p. 134). Example on p. 48.

- g. **Adaptation:** It is used in those cases where the type of situation being described by the source language does not exist in the target language culture. In those cases, the translator's task is to create a new situation that can be considered as being equivalent. For Vinay and Darbelnet (1958) adaptation can, therefore, be described as a special kind of equivalence, a situational equivalence. Adaptations are particularly frequent in the translation of books and film titles. Example on p. 49.

Two other translation methods described by Vazquez Ayora (1977) follow:

- h. **Addition:** It consists of adding more words into the target message in order to make it clearer. Additions could be made for extra linguistic reasons or because of syntactic restructuration of sentences in the target language to make them more natural. Example on p. 51.
- i. **Omission:** It is used when it is necessary to omit redundancy or repetition. It is advisable to omit terms or words that express a meaning that could be inferred from the context. Example on p. 52.

Methodology

The procedures transposing the text in the T.L. without upsetting the syntactic order or even the lexis are not fully possible due to structural or metalinguistic differences. Therefore, to accommodate all the necessary elements for the desired outcome requires, along with identification of all translation methods previously described, a location of the exact page, paragraph and line where a specific method is used. Some examples of the methods are only mentioned when they represent an interesting or a challenging example to be depicted.

Several tools were of great importance, time after time, to bring to a successful outcome a translation of this type:

- Computer. Allows for uncountable support procedures which are fundamental to reach the objectives. Typing, editing, filing, browsing, finding, printing, reproducing, transferring texts and following links. Some on line Internet web sites excel for consulting dictionaries, translation blogs, encyclopedias, articles, translation data bases, and are just a few chores facilitated by this invention. Other benefits are the easiness with which one can interact in specialized discussion boards in which language connoisseurs and others share ideas and points of view regarding translation matters.
- Printed dictionaries. The most important tool for a translator. English-English, English-Spanish, Spanish-English, Spanish-Spanish, synonyms-antonyms,

specialized by fields of expertise, each one with the potential to spark creativity to the mind with the most suitable word for the context in turn.

- **Technical Glossaries.** Specialized subjects demand the translation of specialized words. These are commonly found in glossaries by trade or by fields of expertise.
- Books about educational methods, specialized publications in biology, anthropology, articles, cited in the bibliography at the end.

Last but not least important: consultations and paying attention to professors. A little advice can go a long way when applied properly. They know how much little support to provide so that somehow we internalize through practicing and experiencing, that we have acquired the tools to put together the theoretical framework to carry out not only this translation project but any ambitious project of this kind. This may be just a few pages or a whole book. This empowerment represents a solid stepping stone in the professional career of anyone.

- **Check list.** Once the final translation has been accomplished a thorough revision takes place. Morry Sofer (2003) uses... “a check list with some of the most important points... [and it] plays a very important role for this task”:
 1. **Omission:** Did you fail to translate any particular word or phrase, or even a paragraph?
 2. **Format:** Does your format follow the original?

3. **Mistranslation:** Did you mistranslate any particular word?
4. **Unknown words:** Were there words you were not able to translate which you would like to explore further?
5. **Meaning:** Did you miss the meaning of any phrase or sentence?
6. **Spelling:** Did you misspell any word which the spell-check function did not catch?
7. **Grammar:** Did you make any grammatical mistake?
8. **Punctuation:** Did you mispunctuate or miss any punctuation marks?
9. **Clarity:** Did you fail to clearly convey the meaning of any particular part of the text?
10. **Consistency:** Did you call something by one name and then by another without any good reason?
11. **Sound-alike words:** Did you mistranslate a word because it looks or sounds like the word in the target language but it has a different meaning?
12. **Style:** Are you satisfied with the way your translation reflects that style of the original text?

To conclude, each element described will be used in every step of the process to support the analysis of the process of translation in each case in which a certain technique is used. For example, if an equivalence is applied, it will be stated why it is considered to be a factual evidence of the equivalence method. The same procedure will be applied to all methods in the project which follows.

Translation

Here, we have in Spanish the descriptions of three characteristic trees which provided, “*casa, vestido y sustento*”, clothing, food and shelter: Silk Cotton (Ceiba) from pages 111-113 of S.T. (Source Text), providing the white and silky fiber for ruler’s cloths, Cohune palm (Corozo) from pages 116-119, as the thatch, the cooking oil, the lamp oil; and Breadnut (Ramón) from pages 132-135, the permanent protein source nut and staple up to this day, ever producing, nuts, foliage to be used as hay, as the text explains. Nature has provided this triad of trees for at least the last ten millennia, so much well being to people in Mesoamerica that ended up being an important stepping stone for one of the most advanced civilizations throughout the world. But, of course that was not all they had, nature provided them with more than 200 different trees, the largest variety of reptiles in the world, besides the huge spectrum of butterflies, birds, mammals, insects, plants, up to this day. Many of course, are depicted in the book where the source text for this translation was selected.

This translation comprises fragments of:

Schlesinger, V. (2001) *Animals & Plants of the Ancient Maya. A Guide.* Austin, U.S.A.: University of Texas Press.

Ceiba petandra

CEIBA *Ceiba* (I) [inglés] *Ya’axch’, Yàaxche’* (M) [Maya]

Identificación: El tronco de la ceiba, recto y salpicado con espinas, se dispara hasta 30 m de altura al tiempo que grandes contrafuertes surgen desde su base. Las ramas crecen solamente desde lo alto del árbol desplegándose en un solo plano.

Cada hoja verde angosta está compuesta de 5 a 8 folíolos. Una vez polinizadas, las flores rosa blanquecino de cinco pétalos y 3 cm de largo maduran en cápsulas ovaladas de 12 a 18 cm de largo. En racimos, las frutas grises conocidas como kapok se abren y sueltan tanto sus fibras sedosas como sus pequeñas semillas aceitosas (Baker 1983).

Hábitat: Las ceibas tienden a crecer a la orilla de la selva o cerca de ríos en selva tropical húmeda, vegetación secundaria, y sabanas (Baker 1983). Generalmente se les deja crecer cerca de las casas y en zonas taladas o cultivadas.

Extensión: Las ceibas han poblado África oriental, el sureste de Asia, y la América tropical. Se les encuentra desde el sur de México hasta el Perú y en todas las islas del mar Caribe. Se les considera originarias de éstas últimas donde crecen mejor a menos de 450 metros de altura.

Especies similares: Existen nueve especies de ceibas en la América tropical. Algunas especies carecen de contrafuertes y espinas (Purseglove, 1968).

El árbol de la ceiba fue el Primer Árbol. Crece más alto o tan alto como cualquiera de los más altos en la región Maya. Sus ramas están cargadas de epífitas fibrosas y espinosas. Para los antiguos mayas la ceiba representaba el universo: el mundo superior, el mundano o central y el inframundo. La sombrilla de ramas de ceiba simboliza el cielo o mundo superior donde sus trece dioses hicieron su hogar. Estos dioses eran benevolentes pero tenían su temperamento y requerían cuidados y reconocimiento.

Mientras que de enero a marzo caen las hojas verdes angostas, las hojas del mundo celeste empiezan a florecer con buqués de flores de un color rosa blanquecino. Los capullos abren ya que el sol se pierde de vista poniéndose hacia

el inframundo y resaltan contra el fondo del cielo como estrellas brillantes. De noche, los murciélagos vienen a beber el néctar de las flores y a comer el polen mientras que en las primeras horas de la mañana, pequeñas aves tales como mirlos, tangarás, oropéndolas, urracas pardas, colibríes, oropéndolas de Moctezuma, y muchas otras, en bandadas, a veces de cientos, se dirigen a las ramas y capullos. También de ahí se nutren las abejas sin aguijón (*Trigona*), abejas productoras de miel, avispas y escarabajos. Todo este beber y comer ayuda a transportar el polen de una flor al estambre de la otra. Al llegar la mañana, las flores abiertas envían sus pétalos girando hasta el suelo (Toledo 1977).

Los capullos fertilizados se comienzan a hinchar y aparecen entre las ramas racimos de vainas en forma de pera. Comúnmente pasan de siete a diez años antes de que la ceiba produzca su primera fruta y, en los años posteriores puede producir cada dos años de 600 a 4,000 frutas por cosecha (Baker, 1983). Su cáscara es gris y rugosa, por dentro están recubiertas por una capa de fibras lustrosas conocidas como seda kapok. Las fibras resbalosas se convierten en relleno para camas, almohadas, y contenedores para flete o aislante para aviones, estudios de sonido y hospitales (Purseglove, 1968); sin embargo, se están reemplazando cada vez más con fibras sintéticas. En la temporada de sequía los capullos se abren y la seda blanquecina sale volando. Las semillas café oscuro enredadas en las constelaciones de seda se alejan de su árbol y se establecen en tierra nueva.

Al tiempo que varias especies jóvenes compiten por luz en su posición de vegetación secundaria, la ceiba crece fuerte y rápidamente. Requiere mucho sol, por lo que constantemente rebasa la sombra del dosel. Se ha reportado que las ceibas jóvenes crecen hasta 4 m por año. A pesar del elevado tamaño y rápido crecimiento del árbol, su madera ligera se deteriora fácilmente por lo que nunca ha sido considerado maderable como lo es la caoba o el cedro español por su madera dura. Sin embargo, el tronco gigante y recto de la ceiba ha sido ahuecado por muchas culturas para hacer canoas; los antiguos mayas habrán hecho lo mismo (Baker 1983).

El mapa del árbol de la ceiba conduce desde las ramas del mundo superior hacia el tronco recto, espinoso e hinchado del mundo terrenal, ahí donde viven los humanos; y debajo de ellos se extienden las raíces del inframundo: hogar de los nueve dioses de la aflicción y el dolor. Las raíces poco profundas del árbol se salen de la tierra para formar estructuras de apoyo para el tronco y para las ramas de los otros mundos. Estos contrafuertes estabilizan al árbol cuando empieza a soplar viento fuerte.

La palabra maya para el árbol de ceiba puede ser interpretada de dos formas, dependiendo de la pronunciación de la palabra. En general, el significado de las palabras en maya varía mucho según su articulación, por lo que el debate sobre cómo expresarlo en lenguaje escrito prevalece. Sin embargo, la palabra antigua para *ceiba* ha sido traducida como *ya'axche'* (árbol verde), así como *y'aaxche'* que significa "primer árbol" (Martinez-Huchim, 1998).

Orbignya cohune

COROZO Cohune Palm (E) Mop (M)

Identificación: Las palmas, plumas de ave flexibles, surgen del gigantesco tallo que parece tronco arqueándose a lo largo de sus 10 o más metros. Su tronco corto y robusto mide unos 50 cm de diámetro al alcanzar la palmera 10 a 20 metros de altura. Sus frutos, cubiertos de una cáscara fibrosa de unos 6 cm de largo, parecen pequeños cocos. Una sola palmera puede producir de 800 a mil en una temporada. Miles de pequeñas flores surgen entrelazando largos brotes (Aguilar y Aguilar, 1992).

Hábitat: Crecen desde el nivel del mar hasta 300 metros de altura en selva tropical baja. Por lo general crecen en grupos densos, pero en grupos dispersos más pequeños prefieren tierra profunda y bien drenada (Aguilar y Aguilar, 1992).

Extensión: Se localizan en el sur de México, Belice, en los departamentos guatemaltecos del Petén, Alta Verapaz e Izabal; y desde Honduras hasta Costa

Rica (Aguilar y Aguilar, 1992). Viven más al norte que cualquier otra especie de *Orbignya* (McSweeney, 1995).

Especies similares. La *Orbignya guacayule* crece en el lado del Pacífico del istmo centro americano (McSweeney, 1995).

Las palmas gigantes del corozo crecen hasta el dosel superior de la selva. Crecen tanto que la gente en Belice llama al corozo, árbol. Las palmas más largas son cortadas y colocadas como techumbre para viviendas con techo de dos aguas, establos y cobertizos que sombrean ruinas mayas; cortarlas no afecta la palma. Su parte central, el *rachis*, crece recto y grueso para convertirse en una barra inflexible. Una vez cortadas a lo largo, las mitades son colocadas horizontalmente sobre el armazón del techo de manera que las hojuelas cuelguen alineadas como una tela con listones. Se ha hecho así por décadas. La gente de Belice y Guatemala dice que cortar la palma en luna nueva aumenta la vida del tejado pero solo unos pocos siguen esta tradición oral. Los techos de corozo duran de seis a veinte años; quizás la gran discrepancia pueda ser atribuible a la luna.

A pesar de que los corozos producen las palmas más largas, al menos para la gente de Belice, no son las mejores para hacer techos de palma. La Botán (*Sabal morrisiana*) y la palma plateada (*Thrinax radiata*) son las preferidas, pero en muchos lugares las dos son difíciles de encontrar. La Botán ha escaseado al grado de casi extinguirse en las localidades debido al incremento de turismo que demanda una arquitectura rústica auténtica. La inmigración de refugiados ha afectado también la abundancia de corozo. Por huir de la violencia en Guatemala, los inmigrantes Mopan y Kekchi maya viven ahora en partes de Belice y usan las palmas como techumbre. La gente menciona que las palmas no cuestan y son fáciles de conseguir. Además, todos saben que este tipo de techo mantiene la casa fresca y silenciosa bajo el sol ardiente de Belice. Sin embargo, los techos de palma están dando cabida a los techos de lámina galvanizada, mismos que atraen

menos ratas y ratones (y por lo tanto menos serpientes cazando a los roedores) y necesitan menos reparaciones. También es cuestión de no ser menos que los vecinos.

La palmera de corozo alimenta su propia tierra. Las palmas gigantes caen al lecho forestal y se pudren junto a la base de la palmera transformándose en tierra negra. Los agricultores llaman al corozo el barómetro de la tierra pues solamente vive en la más profunda y fina mantilla. Estos pueden crecer esparcidos y aislados o en grupos vastos llamados montículos de corozo, donde dominan todas las otras especies.

Debido a que los corozos son señal de buena tierra se les derriba junto con el resto de la selva cuando la tierra se limpia para sembrar. Sin embargo, las raíces de los corozos crecen profundamente y los nuevos brotes pueden crecer bajo tierra a lo largo de siete a diez años.

A pesar de cortarlos o sufrir un incendio, a los brotes jóvenes siempre le crecen hojas nuevas después de unas semanas. La gente considera los corozos como hierbas que constantemente brotan en los sembradíos. A todo el género se le conoce por esta tendencia. Cuando desmontan la tierra para el ganado algunos agricultores optan por dejar los corozos más grandes, pues son difíciles de cortar, y más importante aún, proyectan una fuente de sombra para el ganado.

Una falda de cientos de frutos cubre el suelo que rodea al corozo, las drupas maduran en diciembre y para mayo están ya bien secas (McSweeney, 1995). Cada porción de la oblonga fruta, dura como piedra y envuelta en su cáscara, puede ser consumida. *Cuniculus* (Agouti) *Paca*, guacamayas rojas, ganado y otros buscan el fruto para comerse la dura capa externa (Aguilar y Aguilar, 1992). La gente recolecta los frutos caídos para almacenarlos fuera de la temporada. Romper los frutos puede ser difícil, aunque los expertos reportan que pueden romper dos o tres en un minuto. La gente machaca las pepas con un bastón largo y extrae la grasa amarilla del corozo, misma que tiene un sabor a coco pero más ahumado. El proceso para extraer, hervir, mezclar, y espumar lleva tres días (McSweeney, 1995).

Al corozo nunca se le ha visto envuelto en grandes negocios. Muchos intentos de comercializarlo reportan que la variación en el número de frutos en cada manojo no permite una utilidad segura. Algunas personas en Belice extraen el aceite para complementar el ingreso generado en sus milpas. En ocasiones especiales se fríen los plátanos machos y los frijoles en la grasa rica del corozo. También, alguna vez, la grasa era reducida en jabones, pero ahora no es tan común. La gente alimenta a los cerdos con las pepas machacadas, y algunas alimentan a los pollos con los epicarpios. Utilizan también los endocarpios como combustible pues se queman lentamente y parejo. El vástago del manojo es golpeado hasta que se desmenuza en juncos fibrosos y es usado después como espanta moscas. Se han reportado muchos de estos usos del corozo en Belice, Guatemala, y Honduras (Aguilar y Aguilar, 1992; Johannessen, 1963; McSweeney, 1995).

La gente se come el corazón de la palmera, pero al cortarlo la planta muere. Con las palmas extraídas, queda en el centro una cepa de corazón que tiene la textura fibrosa de la carne (McSweeney, 1995). Es una práctica común escarbar una cavidad redonda en el corazón y permitir que la savia escurra en el hoyo. Después de una semana comienza la fermentación y la gente se toma el vino savia del corazón (Aguilar y Aguilar, 1992).

Brosimum aliacstrum

RAMÓN Breadnut (I) Chak óox (M)

Identificación: El ramón crece hasta 40 metros de altura con un diámetro de hasta un metro, y tiene un tronco plateado de liso a escamoso. Un látex líquido blanco, amargo al gusto, satura la corteza interna. Las hojas ovaladas gris verdusco nunca se caen del todo. Cantidades abundantes de pequeñas flores color crema florecen, y una vez impregnadas se hinchan en frutas verdes ovaladas. Ya maduras, miden de 2 a 2.5 cm de diámetro y son similares a los

albaricoques. Envuelta en una semilla larga de 1.2 cm de largo, la gruesa capa de pulpa tiene un sabor dulce (Ortiz et al, 1995).

Hábitat: El árbol crece en selva tropical húmeda y seca (Ortiz et al. 1995), comúnmente en grupos densos llamados ramonales.

Extensión: El árbol del ramón crece en ambientes tropicales del sur de México, Belice, Guatemala, El Salvador, Honduras y en las islas Caribeñas y Hawái, justo desde arriba del nivel del mar hasta 2,000 m de altura (Ortiz et al, 1995).

Especies similares: Se han identificado cuatro especies de *Brosimum* en Guatemala: *Brosimum alicastrum*, *B. panamense*, *B. costarricanum*, *B. terrabanum* (Ortiz et al, 1995). En Costa Rica y hasta Sudamérica vive *Brosimum utile*, un árbol que produce un látex blanco bebible; su nombre común es traducido como “árbol vaca” (Record y Hess, 1943).

Al crecer los centros mayas la mayoría de la selva y los árboles que los rodeaban fueron derribados, sin embargo, aquellos con una utilidad especial, tales como el ramón, fueron conservados. Después de que estos centros fueron abandonados en el siglo X y la foresta comenzó a crecer, árboles selectos como el ramón, ya abundantes y completamente maduros, fueron capaces de desplazar muchas de las otras especies de la selva. Este inicio, según la teoría, podría explicar la abundancia actual de ramones alrededor de sitios arqueológicos (Lundell, 1937; Puleston, 1982). Muchos académicos creen que los árboles de ramón crecen donde los suelos y las condiciones ecológicas generales los mantienen mejor, como en los escombros de piedra caliza de las ruinas (Ortiz et al, 1995). Otra idea da crédito a los murciélagos que viven en los templos caídos. Al cargar estos grandes cantidades de semillas de ramón y comérselas cerca del lugar donde

pasan la noche, tiran algunas y acaban por germinar en los alrededores (White y Darwin, 1995).

El ramón es considerado un árbol importante, principalmente por su fruta abundante y comestible. El ramón contiene una mejor calidad de proteína que la del maíz, además de otros importantes nutrientes. Hoy en Yucatán, los mayas cultivan los árboles de ramón alrededor de sus casas (Rico-Gray, Chemas, y Mandujano, 1991), se comen la fruta y hierven las semillas; la semilla, pepa, o nuez, tiene un sabor similar a la castaña.

Un solo árbol puede producir 12,000 frutas por temporada y puede hacerlo varias veces al año; el suelo es cubierto por una falda de fruta en temporadas de producción (Coelho et al. 1976). Monos aulladores negros mexicanos, mono araña centroamericano y otros mamíferos y aves, agarran la fruta del árbol, le mordisquean lo dulce (llamado *ox* en maya) y tiran el resto.

Una vez caídas las drupas, el ratón semi-espinosa, agutíes, pacas y ardillas chicas se alimentan de las semillas. La mariposa Celeste común, *Morpho* (DeVries, 1987), así como otros insectos y hongos, consumen las frutas podridas. Las semillas que no están dañadas germinan en un lapso de 3 a 5 semanas (Burkey, 1994).

Dennis Puleston descubrió que en áreas sin cultivar, veinticinco ramones en promedio producen anualmente 1,763 kg de alimento por hectárea. El maíz produce 324 kg por hectárea por año. La producción del ramón puede variar enormemente de una estación a otra. Y, si se plantan en condiciones óptimas, los ramones producen mucho más que cuando son silvestres. Una hectárea de tierra plantada con ramones, incluso media hectárea, puede alimentar a una familia fácilmente. Puleston calculó que si una familia crecía ramones alrededor de su casa, y algunos de sus miembros le dedicaban de una a una hora y media diarias durante la temporada (7 a 10 semanas) podrían recolectar suficiente comida que les alcance para un año (Puleston, 1982). Puleston empezó a cuestionarse si los antiguos mayas dependían igual, si no más, que del maíz como su mayor fuente de fécula.

Los chultunes, cámaras subterráneas estucadas encontradas en varios escenarios mayas antiguos tales como Tikal y muchos otros, pudieron haber sido usados para guardar y preservar fruta de ramón. Puleston descubrió que las semillas de ramón se mantienen frescas y comibles incluso trece meses después de almacenarse en las cámaras, mientras que otros productos alimenticios germinaban, se pudrían, se infestaban con aradores, y eran consumidos por los hongos en semanas. La supervivencia de la semillas del ramón puede deberse a su contenido de agua del 6.5 por ciento, el cuál es bajo comparándolo con el de los frijoles (12 por ciento) o maíz seco (10.6 por ciento). Algunos chultunes, además de la posibilidad de almacenar alimentos, almacenaban agua y grano, dependiendo del lugar, (Puleston, 1971). Aunque a Dennis Puleston le cayó un rayo mientras trabajaba en la idea de que los antiguos mayas dependían demasiado en la fruta del ramón su trabajo e ideas provocativas quedaron lejos de ser completadas.

En estos tiempos modernos la fruta del ramón se come entera o molida en harina negra al tiempo que hace más duradero el abasto de maíz (Lundell, 1937), y es preparada frecuentemente como atole caliente con miel. Un bebé puede beber la aguada savia lechosa como sustituto de leche materna (Arvigo, Yaquinto y Epstein, 1994), aunque ésta tiene un sabor extremadamente amargo. La resina es también un remedio calmante cuando se absorbe con un poco de algodón y es colocada alrededor de un diente cariado (Lázaro, 1998). Como alimento de ganado, particularmente las hojas, se dice que enriquece la leche de los animales que están criando (Puleston, 1982). El forraje era una fuente de nutrición importante para las mulas de los colonizadores y más recientemente para las bestias de carga de los chicleros que cosechan chicle (Pohl, 1999). En el pasado las semillas eran también usadas en las sonajas de los curanderos adivinos, llamadas en maya *topp-ox-kab* (Roys, 1931). Aunque su madera es resistente, se pudre con facilidad, otorgándole un valor comercial bajo (Record y Hess, 1943).

Analysis

The process by which the techniques and strategies employed were applied little by little to turn the source text into a text in a different language maintaining the same intended message is a customary activity for a professional translator.

In the previous section the chosen text has already been translated into Spanish keeping in mind that it must reflect the source language and follow the guidelines of a free translation. A final analysis and careful examination of the target language text is due.

As mentioned in the Theoretical Framework section, according to Vinay and Darbelnet, translation procedures or methods are used in increasing order of difficulty: borrowing, calque, literal translation, transposition, modulation, equivalence, adaptation. Two other translation methods described by Vazquez Ayora (1977) are also used here: addition and omission. So, in order to fulfill the task, these nine methods are applied in different degrees and the three planes of expression lexis, syntactic structure, and message are always kept in view.

The following comparative charts contain the same phrase in both languages, source language (SL) and translated text (TT). They comprise the most representative examples of each one of the techniques described previously which were applied in this translation.

Borrowing

It is the simplest of all techniques and it is used in order to introduce the flavor of the source language culture into the translation. Borrowing addresses the common generalized use of such words in other papers of the same field, is used as a matter of style, and is employed when a word is more suitable or known in the target language. This technique is present in the following examples.

Source Language	Target Language
Growing in clusters, the gray fruits known as kapok open...	En racimos, las frutas grises conocidas como kapok se abren... Page 27, Line 3
They live the farthest north of any <i>Orbignya</i> species.	Viven más al norte que cualquier otra especie de <i>Orbignya</i> . Page 30, Line 3
The tree grows... often in dense stands called <i>ramonales</i> .	El árbol crece... comúnmente en grupos densos llamados ramonales. Page 33, Line 5
In addition to possibly storing food, some chultunes stored water and grain	Algunos chultunes, además de la posibilidad de almacenar alimentos, almacenaban agua y grano, Page 35, Line 11

Owing to the fact that the bibliography studied during the process of translation showed a generalized use of these terms, the decision of maintaining the style within this translation was made. Therefore, keeping these same terms makes them suitable to be compared with other papers in the same field and addresses the common and generalized use of such words.

Calque

For Vinay and Darbelnet (1958), calque is a special kind of borrowing whereby a language borrows an expression from another, but then translates literally each of its elements. The result is either

- (i) a lexical calque which respects the syntactic structure of the TL, whilst introducing a new mode of expression; or,
- (ii) a structural calque which introduces a new construction into the language.

Source Language	Target Language
Mexican black howler monkeys	Monos aulladores negros mexicanos Page 34, Line 13

This is a very simple example of the use of calque. Nevertheless, a literal translation of every element was needed, and in order to make the target phrase more understandable, the word order was changed.

Literal translation

For Vinay and Darbeinet (1958), literal or word for word translation is the direct transfer of a SL text into a grammatically and idiomatically appropriate TL. With this technique, the translator only observes the adherence to the linguistic servitudes of the target language.

In the following examples the translation follows very closely the form of the SL.

Source Language	Target Language
Identification: The trunk of the ceiba tree, straight and stippled with thorns, shoots up 30 m high, while large buttresses flute from its base.	Identificación: El tronco de la ceiba, recto y salpicado con espinas, se dispara hasta 30 m de altura al tiempo que grandes contrafuertes surgen desde su base. Page 26, Line 21
At night, bats come to drink flower nectar and eat the pollen while during the first morning hours, birds such as	De noche, los murciélagos vienen a beber el néctar de las flores y a comer el polen mientras que en las primeras horas de la mañana,...

<p>blackbirds, tanagers, orioles, brown jays, hummingbirds, Montezuma oropendolas, and many others flock – sometimes in hundreds-- to the branches and blooms.</p>	<p>...pequeñas aves tales como mirlos, tangarás, oropéndolas, urracas pardas, colibríes, oropéndolas de Moctezuma, y muchas otras, en bandadas, a veces de cientos, se dirigen a las ramas y capullos.</p> <p>Pag. 28, Line 3.</p>
<p>Dark brown seeds entangled in the constellations of silk drift from the parent tree and establish themselves in new ground.</p>	<p>Las semillas café oscuro enredadas en las constelaciones de seda se alejan de su árbol y se establecen en tierra nueva.</p> <p>Page 28, Line 19</p>

In the previous examples of word for word translation the structures of the sentence were not changed in the target language since they correspond to the structure of the sentences in the source text. They are very simple examples of literal translation because they show how the first meaning of a word can be equivalent to that of another word in a specific TL.

The following sentences provide clear examples of some variations of applied literal translation.

Source Language	Target Language
Once pollinated, the 3 cm long, five-petaled, whitish pink flowers mature into 12-18 cm long oval capsules.	Una vez polinizadas, las flores rosa blanquecino de cinco pétalos y 3 cm de largo maduran en cápsulas ovaladas de 12 a 18 cm de largo. Page 27, Line 1

Flexibility in the syntactic rules of English and Spanish is exemplified in the previous sentences since it was necessary to modify the word order without losing the character of a literal translation.

So, the next example shows that even when there are changes in the order of the elements in a sentence it can be considered a literal translation.

Source Language	Target Language
Nine ceiba species exist in tropical America...	Existen nueve especies de ceibas en la América tropical... Page 27, Line 13

In English the subject of a sentence always goes at the beginning but in Spanish it can be placed in different parts of the sentence. Therefore, the translator can make different decisions considering style and comprehension. In this last example, the subject placement was changed in order to make the sentence sound more natural and more colloquial.

“If, after trying the first three procedures, translators regard a literal translation unacceptable, they must resort to the methods of oblique translation. By unacceptable we mean that the message, when translated literally,

- i. gives another meaning, or
- ii. has no meaning, or
- iii. is structurally impossible, or
- iv. does not have a corresponding expression within the metalinguistic experience of the SL, or
- v. has a corresponding expression, but not with the same register.

Oblique translation comprises the following four techniques: Transposition, modulation, equivalence, adaptation. Some examples of each technique follow.

Transposition

For Vinay and Darbelnet (1958), transposition consists of the replacement of one word class with another without changing the meaning of the original message. Transposition also occurs within a language. Translators must choose to carry out a transposition if the obtained translation fits better into the expression, or allows a particular touch of style to be retained. The transposed form is generally more literary in character.

Grammatical changes occurred throughout the text, as was expected. For easier understanding, the examples here are grouped in word categories:

- Changing a gerund noun phrase into an infinitive noun phrase:

Source Language	Target Language
The short, stout trunk measures 50 cm or so in diameter –the whole palm standing 10-20 m in height.	Su tronco corto y robusto mide unos 50 cm de diámetro al alcanzar la palmera 10 a 20 metros de altura. Page 29, Line 19
The entire process of extracting, boiling, stirring, and skimming takes three days (McSweeney 1995).	El proceso para extraer, hervir, mezclar, y espumar lleva tres días (McSweeney 1995). Page 32, Line 1.

<p>Carving out a round cavity in the heart and letting the sap drain into the hole is not an uncommon practice.</p>	<p>Es una práctica común escarbar una cavidad redonda en el corazón y permitir que la savia escurra en el hoyo.</p> <p>Page 32, Line 18.</p>
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To respect the word categories would have meant odd or meaningless sentences. Therefore, it was necessary to change the gerunds, subjects of the sentences, into infinitives when translated into Spanish.

Modulation

It is a variation of the form of the message which is produced by a change of point of view keeping in mind the original intention and sense of the source text.

This change is justified when one translation results in an unsuitable, unidiomatic or awkward utterance even when it is grammatically correct if it fits better with the cultural context. Some examples follow.

Source Language	Target Language
They are often left standing around homes and in cultivated or cleared areas.	Generalmente se les deja crecer cerca de las casas, y en zonas taladas o cultivadas. Page 27, line 7
For the ancient Maya the ceiba mapped out the universe: the upper world, middle world, and underworld	Para los antiguos mayas la ceiba representaba el universo: el mundo superior, el mundano o central y el inframundo. Page, 27, line 17
...and long pear-shaped pods appear in clusters among the branches.	...y aparecen entre las ramas racimos de vainas en forma de pera. Page 28, line 11

Botán, since the rise of tourism and its demand for rustic, authentic architecture, has become scarce to almost extinct in local areas.	La Botán ha escaseado al grado de casi extinguirse en las localidades debido al incremento de turismo que demanda una arquitectura rústica auténtica. Page 30, line 21.
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In order to avoid misconceptions in the target text sometimes it is necessary elucidate concepts or phrases by changing, as I have already mentioned, only the form, not the sense, to fit better into the cultural context of the target language.

Source Language	Target Language
...in future years,	...en los años posteriores... Page 28, line 12
...grows straight and thick into an inflexible rod.	...crece recto y grueso para convertirse en una barra inflexible. Page 30, line 11
Too, it is a matter of keeping up with the Joneses .	También es cuestión de de no ser menos que los vecinos . Page 31, line 4

Other cases where modulation is needed occur when the point of view of the message is changed: changing a positive sentence into negative or the other way around, or changing a passive into an active form of the verb.

Equivalence

Consists of representing the same situation in two texts –source and target message- using completely “...different stylistic and structural methods” (Vinay and Darbelnet, 1958). In most cases equivalences are already fixed and belong to a phraseological collection of idioms, clichés, proverbs, and nominal or adjectival phrases.

Source Language	Target Language
But palm roofs are giving way to metal roofs,	Sin embargo, los techos de palma están dando cabida a los techos de lámina galvanizada, Page 31, line 1

Adaptation

It is used, according to Vinay and Darbelnet (1958), in those cases where the type of situation being described by the source language does not exist in the target language culture. Here, the translator's task is to create a new situation that can be considered as being equivalent keeping in mind that the register and style have to be maintained. Besides, since adaptation is a situational equivalence, according to Fawcett (1997), a complete change of the original expression, as in the following example, has to be made to shift and fit into another cultural environment.

Source Language	Target Language
Too, it is a matter of keeping up with the Joneses .	También es cuestión de de no ser menos que los vecinos . Page 31, line 4

In the last example, several morpho-syntactic structures were tried out before coming to terms with the most suitable equivalent in the target language that expressed the same colloquial cultural sense of familiarity expressed in the source text. Interestingly enough, the chosen version was found (University of Granada, Spain, dictionary's web site) seconds before the decision had to be taken. I had gone over the phrase for quite a while, as very similar expressions were found in the back of my mind and in the bibliography supporting this project, but always

keeping in mind that register and style had to be maintained to create a new situation that could be considered as being equivalent.

Addition

It consists of adding more words into the target message in order to make it clearer. Additions could be made for extralinguistic reasons or because of syntactic restructuring of sentences in the target language to make them more natural. Vazquez Ayora (1977) explains that it "... consists of adding more words to the target message without changing the meaning". Here we have some examples:

Source Language	Target Language
...but few follow this oral wisdom.	...pero solo unos pocos siguen esta tradición oral. Page 30, line 18
...live in parts of Belize...	...viven ahora en partes de Belice... Page 30, line 27

Omission

It is used when it is necessary to omit redundancy or repetition. It is advisable to omit terms or words that express a meaning that could be inferred from the context (Vazquez Ayora, 1977).

Source Language	Target Language
Dark brown seeds entangled in the constellations of silk drift from the parent tree and establish themselves in new ground.	Las semillas café oscuro enredadas en las constelaciones de seda se alejan de su árbol y se establecen en tierra nueva. Page 28, line 19
...cutting the palm during a sliver moon increases the life span of the thatch...	...cortar la palma en luna nueva aumenta la vida del tejado... Page 30, line 17

Conclusions

Translating has always been a challenging task. We have seen, throughout the development of this project, many of the steps involved and the myriad chores involved in translating faithfully a technical text from English into Spanish. The most important and challenging part for me has always been understanding fully, technically, every word and phrase of the ST. A deep understanding, concentrating not only on one detail but concentrating in all of them at the same time, helps to get a sense of the author's intention, context, register, and style so that they are recreated in the TL.

In my case, reading all sorts of essays, articles, books on many subjects and experiencing or being exposed (sometimes through pure imagination) to different contexts –environments, scenarios, places, events and deeds— has allowed me to imbibe different aspects of North American language and culture which facilitate such understanding. If you know something about their past and present history, and their intention, then the subtleties of the ST begin to make more sense... and with it, an order and harmony that takes over which comprises the repertoire I carry around with me which many label as English Language Knowledge. Add to it what is called bi-cultural ability, the comfortable interaction within either culture or language, where each form of expression is seen through a different kaleidoscope.

The biggest challenge for me, besides understanding the intended meaning of the author, is always to know where and how to find the information we are looking for.

In the case of this technical translation it was necessary to visit two libraries in town. The one belonging to ECOSUR (El Colegio de la Frontera Sur), governmental institution dedicated to investigate ecosystems, environment and perform border studies in this region, and the other one at UQRoo (Universidad de Quintana Roo). The wealth of information on the subject of this translation is always surprising. The key is to keep focused on just a few words or concepts to be found and soon enough they emerge. Libraries always have new or very old or very local material that does not make it to the Internet or to the specialized data bases found in fee-based information services, but they can be very helpful. Visiting directly the book shelves and racks rather than the index files worked best for me due to the fact that just by sight one can easily leave out the ones we are not looking for, leaving room for the emergence of new options that were not thought of before. Examples of these are included in the bibliography section.

In order to make sure of the meaning of some terms in SL and TL, it was also necessary to briefly interview biologists, environmentalists, nature lovers and educators, tour guides, anthropologists, many of them friends or acquaintances, just to make sure that a certain word was the right choice in that specific field of expertise (birds, plants, mammals), or to clarify a specific term in order to convey to

the reader the feeling the author expressed when she wrote the book in the first place.

As was mentioned earlier, a technical translation of this nature makes it always necessary to have at hand bibliography related to the translation subject, glossaries, related Internet links, forums, and services and all the hardware; and so at any point in time they can help to widen the horizon and understanding of the source text (ST).

Almost at the end of this project I realized the enormous help I had had from the World Wide Web resources which facilitated the accomplishment of this project. The speed and amount of options available are overwhelming. Nevertheless, keeping focused was always the key to accomplishing the task at hand. In my case, the fact that a couple of semesters ago a blog, www.EstaMadreLengua.blogspot.com, for translators at university level was created with another three class peers –Abi, Argelia and Zara- in the Educational Technology class saved me long hours of searching.

Once the translation process starts, especially for a bilingual final university project of this nature, a thorough revision, as explained in the methodology, has to be made in order to always consider new possibilities. It is important that the last revision of the English language part on any project will always be performed by a native speaker of English just as the Spanish part is always revised by a native

speaker of Spanish. Little by little, all the gaps are filled in and this process is finished when the final copy is submitted for printing.

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Animals & Plants of the Ancient Maya

◆ A Guide ◆



VICTORIA SCHLESINGER

Foreword by Carlos Calindo-Leal ◆ Illustrations by Juan C. Chab Medina

"Part field guide, part book of vignettes discussing the animals and plants most commonly seen in the Maya area, this fine guide provides a fresh synthesis of anthropological and biological research that will serve as an engaging and practical resource for visitors, students, and burgeoning naturalists."

—Paul R. Ehrlich, *President, Center for Conservation Biology, Stanford University*

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A GROWING INTEREST in all things Maya brings an increasing number of visitors to prehistoric Maya ruins and contemporary Maya communities in Guatemala, Belize, El Salvador, western Honduras, the Yucatán Peninsula, and the southern areas of Chiapas and Tabasco, Mexico. For these visitors and indeed everyone with an interest in the Maya, this field guide highlights nearly 100 species of plants and animals that were significant to the ancient Maya and that continue to inhabit the Maya region today.

Drawing from the disciplines of biology, ecology, and anthropology, Victoria Schlesinger describes each plant or animal's habitat and natural history, identifying characteristics (also shown in a black-and-white drawing), and cultural significance to the ancient and contemporary Maya. An introductory section explains how to use the book and offers a concise overview of the history, lifeways, and cosmology of the ancient Maya. It also briefly traces the history of the Maya region from colonial times to the present.

Based in the San Francisco area, Victoria Schlesinger is a writer, conservationist, and outdoor educator who has lived and conducted research throughout the Maya region with the guidance of Stanford University's Tropical Research Program.

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University of Texas Press
PO Box 7819
Austin TX 78713-7819



Cover illustrations by Juan C. Chab-Medina

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Printed in the United States of America

First edition, 2001

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∞ The paper used in this book meets the minimum requirements of ANSI/NISO Z39.48-1992 (R1997) (Permanence of Paper).

Library of Congress Cataloging-in-Publication Data

Schlesinger, Victoria, 1970–
Animals and plants of the ancient Maya : a guide / Victoria Schlesinger.

p. cm.

Includes bibliographical references and index.

ISBN 0-292-77759-0 (cloth : alk. paper)—ISBN 0-292-77760-4 (pbk. : alk. paper)

1. Mayas—Ethnobiology. 2. Botany—Yucatán Peninsula.
3. Zoology—Yucatán Peninsula. I. Title.

F1435.3.E73 S35 2001
578'.0972—dc21

2001027791

... our mother is the moon. She is a gentle mother.
And lights our way. Our people have many notions about
the moon, and about the sun.

RIGOBERTA MENCHÚ, *l. Rigoberta Menchú*

DEAR LOIS -
I'M SO PLEASED TO
MEET YOU AND ANTICIPATE
A LONG FRIENDSHIP.
BEST

Victoria
Schlesinger
0/13/08

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Ceiba pentandra

CEIBA *Ceiba* (S) *Ya'axche'*, *Yáaxche'* (M)

Identification: The trunk of the ceiba tree, straight and stippled with thorns, shoots up 30 m high, while large buttresses flare from its base. The branches only grow from the top of the tree, fanning out in a single, flat plane. Each narrow green leaf is composed of 5–8 leaflets. Once pollinated, the 3 cm long, five-petaled, whitish pink flowers mature into 12–18 cm long oval capsules. Growing in clusters, the gray fruits known as kapok open and let loose their silk fibers and small oily seeds (Baker 1983).

Habitat: Ceibas tend to grow on the edge of the forest or near rivers in wet tropical jungle, secondary vegetation, and savannas (Baker 1983). They are often left standing around homes and in cultivated or cleared areas.

Range: Populating West Africa, Southeast Asia, and tropical America, ceibas occur from southern Mexico to Peru and the islands throughout the Caribbean Sea. They are considered indigenous in the latter areas, growing best at 450 m and lower (Purseglove 1968).

Similar species: Nine ceiba species exist in tropical America: some of the species lack large trunk buttresses and spines (Purseglove 1968).

THE CEIBA TREE was the First Tree. It grows taller, or as tall as, the highest trees in the Maya area. Its branches are laden with grass and spiny **epiphytes**. For the ancient Maya the ceiba mapped out the universe: the upper world, middle world, and underworld. The ceiba's umbrella of branches symbolized the upper world where the thirteen upper gods made their home. These gods were benevolent, but they had tempers and required tending and acknowledgment.

As the tree's narrow green leaves fall from January to March, the branches of the upper world begin to bloom with bouquets of whitish pink flowers. The blossoms open only after the sun has slipped from sight and into the underworld; they stand out against the backdrop of the sky like bright stars. At night, bats come to drink flower nectar and eat the pollen while during the first morning hours, birds such as blackbirds, tanagers, orioles, **brown jays**, **hummingbirds**, **Montezuma oropendolas**, and many others flock—sometimes in the hundreds—to the branches and blooms. Stingless bees (*Trigona*), honey bees, wasps, and beetles feed as well. All this drinking and eating helps to carry the pollen of one flower to the stamen of another. Come



Ceiba (*Ceiba pentandra*)

morning, the open flowers send their petals spinning to the ground (Toledo 1977).

The fertilized blooms begin to swell, and long pear-shaped pods appear in clusters among the branches. Usually between seven and ten years pass before a ceiba bears its first season of fruit; and, in future years, it may produce only every other year, yielding 600–4,000 fruits a crop (Baker 1983). The husks appear gray and rough, but on the inside they are lined with a bed

of lustrous fibers known as kapok for beds, pillows, and shipping containers, studios, and hospitals (Purseglove 1983). Kapok fibers are replacing them. During the rainy season and the whitish silk is blown about in the constellations of silk drift from the ground to new ground.

As various young species compete for attention, the ceiba tree grows quickly and so it continually pushes above the canopy. It has been reported to shoot up as much as 100 feet in growth and towering size, its light wood has not been exploited for timber, unlike mahogany; however, the ceiba's canoes—made by many peoples into canoes—the ceiba tree (Baker 1983).

The ceiba tree map leads down from the upper world, the straight, spiny, and swollen trunk leads down to the middle world and below them to the underworld, the home of the nine gods of sorrow and pain. The roots grow out of the soil to form props of support for the other worlds. These buttresses stand firm against the wind to blow.

The Mayan word for ceiba tree is *ya'axche'* on the pronunciation of the word. The word varies greatly with their articulation in the written language continues. The word has been translated as *ya'axche'* ("green tree") (Martinez-Huchim 1998).

Bursera simaruba

GUMBO LIMBO *Palo mulato*

Identification: Reaching as high as 24 feet, thin, papery red bark that is in a constant state of flaking. In sunlight, the flaking bark changes to a white color. The bark is covered with small wounds. Tiny greenish yellow to white flowers appear in clusters; thousands appear on a tree at



is spinning to the ground (Toledo

and long pear-shaped pods appear
between seven and ten years pass
fruit; and, in future years, it may
—4,000 fruits a crop (Baker 1983).
ne inside they are lined with a bed

of lustrous fibers known as kapok silk. The slippery fibers become the stuff for beds, pillows, and shipping containers or insulation for airplanes, sound studios, and hospitals (Purseglove 1968); increasingly, however, synthetic fibers are replacing them. During the dry season the gray pods split open and the whitish silk is blown about. Dark brown seeds entangled in the constellations of silk drift from the parent tree and establish themselves in new ground.

As various young species compete for light in stands of secondary vegetation, the ceiba tree grows quickly and thrives. It demands a good deal of sun, so it continually pushes above the shade of the canopy. Young ceibas have been reported to shoot up as much as 4 m a year. Despite the tree's rapid growth and towering size, its lightweight wood decays easily and has never been exploited for timber, unlike the hardwood of **Spanish cedar** and **mahogany**; however, the ceiba's colossal, straight trunk has been hollowed by many peoples into canoes—the ancient Maya may have done the same (Baker 1983).

The ceiba tree map leads down from the branches of the upper world to the straight, spiny, and swollen trunk of the middle world. Humans live in the middle world and below them spread the roots of the underworld: the home of the nine gods of sorrow and pain. The tree's shallow roots creep up out of the soil to form props of support for the trunk and branches of the other worlds. These buttresses stabilize the tree when strong winds begin to blow.

The Mayan word for ceiba tree can be interpreted two ways, depending on the pronunciation of the word. In general, the meaning of Mayan words varies greatly with their articulation, and a debate over how to express this in the written language continues. Therefore, the ancient word for *ceiba* has been translated as *ya'axche'* ("green tree") as well as *yáaxche'*, meaning "first tree" (Martinez-Huchim 1998).

Bursera simaruba

GUMBO LIMBO *Palo mulato* (S) *Chakaj* (M)

Identification: Reaching as high as 24 m (Record and Hess 1943), the chakaj has thin, papery red bark that is in a constant state of peeling; if growing in direct sunlight, the flaking bark changes to a striking silver. A red resin seeps from its wounds. Tiny greenish yellow to white flowers (1–2 mm in diameter) grow in clusters; thousands appear on a tree at once, exuding a sweet fragrance. The

One remedy involves boiling strips of the bark (4 cm by 30 cm long) in a gallon of water for ten minutes and then bathing in the tea three times daily (Arvigo and Balick 1993). Another says the small leaves of chakajs help sores to heal when placed wet on wounds and allowed to dry; the leaves should be changed throughout the day (Roys 1931).

Orbignya cohune

COHUNE PALM *Corozo* (S) *Mop* (M)

Identification: The fronds sprout from the trunklike giant, limp feather plumes, arcing 10 m in length or more. The short, stout trunk measures 50 cm or so in diameter—the whole palm standing 10–20 m in height. The fruits, 6 cm long and covered in a thready husk, look like small coconuts; a single palm can bear 800 to 1,000 in a fruiting. Thousands of tiny flowers bloom and lace long, winding stalks (Aguilar and Aguilar 1992).

Habitat: They grow in lowland tropical forest from sea level to 300 m. Often sprouting in dense stands, but commonly in smaller, scattered groups, they prefer deep, well-drained soil (Aguilar and Aguilar 1992).

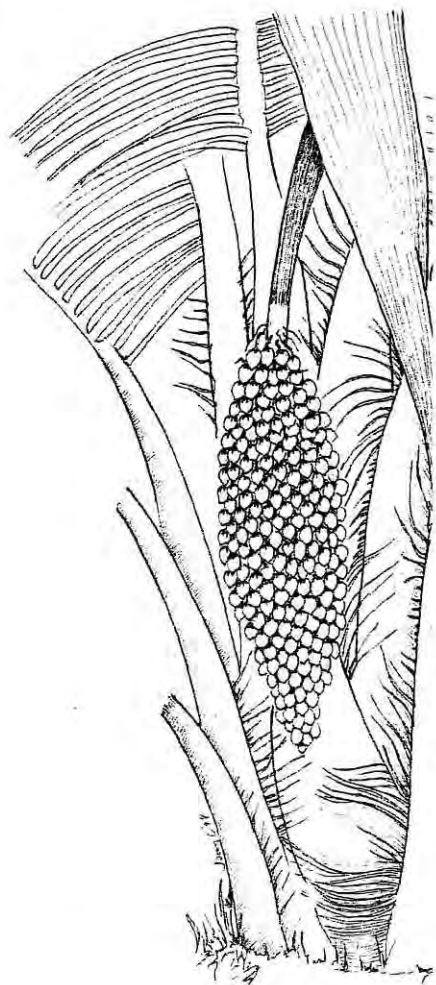
Range: They are found in the southeast of Mexico, Belize, the departments of Peten, Alta Verapaz, and Izabal, Guatemala, and from Honduras down to Costa Rica (Aguilar and Aguilar 1992). They live the farthest north of any *Orbignya* species (McSweeney 1995).

Similar species: The *Orbignya guacuyule* grows on the Pacific side of the Central American isthmus (McSweeney 1995).

THE GIANT FRONDS of the cohune palm shoot up into the upper canopy of the jungle. They stretch so high that people in Belize call the cohune palm a tree. Its longest fronds are cut and laid as thatch for A-frame huts, cattle sheds, and cabanas that shade Maya ruins; the cutting does not damage the palm. Its spine, the rachis, grows straight and thick into an inflexible rod. Once split down the middle, the halves are laid horizontally on the roof frame so that the pinnate leaves drape down in a ribboned sheet. It has been done this way for decades. People in Belize and Guatemala say that cutting the palm during a sliver moon increases the life span of the thatch, but few follow this oral wisdom. The cohune roofs last between six and twenty years; perhaps the great variance can be attributed to the moon.

Even though cohunes grow the largest fronds, they are not, by people in Belize anyway, considered the best for thatching. Botán (*Sabal morrisiana*)

Cohune palm
(*Orbignya cohune*)



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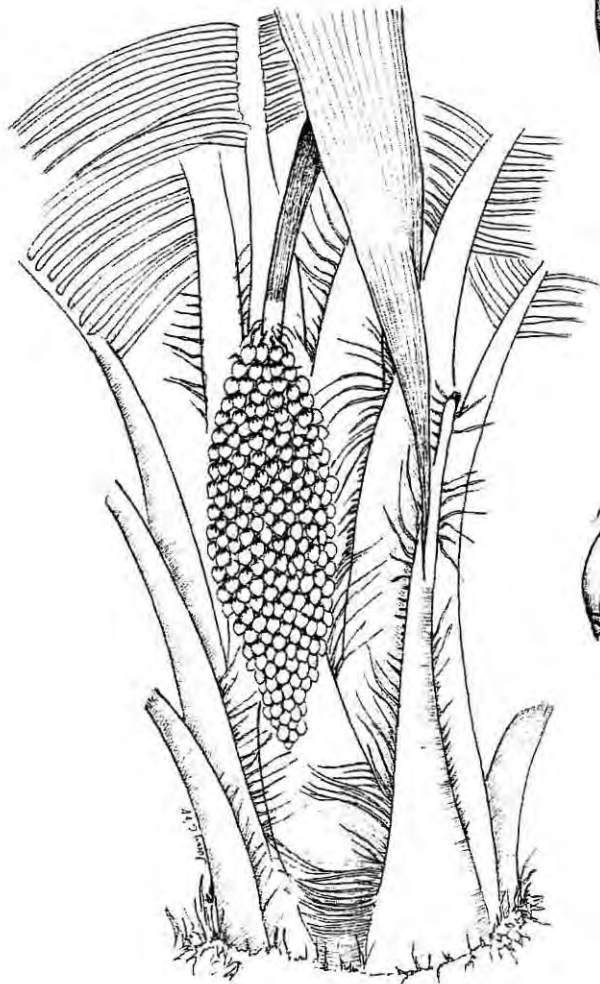
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Cohune palm
 (*Orbignya cohune*)



or the silver thatch palm (*Thrinax radiata*) is preferred, but in many areas both are difficult to find. Botán, since the rise of tourism and its demand for rustic, authentic architecture, has become scarce to almost extinct in local areas. Refugee immigration has affected the cohune palm's abundance as well. The immigrant Mopan and Kekchi Maya, having fled the violence of Guatemala, live in parts of Belize and use the palms for thatch. People say the fronds are free and easy to come by, and, everyone knows, thatch keeps a house quiet and cool in the hot Belizian sun. But palm roofs are giving way to metal roofs, which draw fewer rats and mice (hence fewer snakes chasing the rodents) and need less repair. Too, it is a matter of keeping up with the Joneses.

A cohune palm feeds its own soil. The huge fronds drop to the forest floor and decay at the palm's base, changing into black earth. Farmers call the cohune a barometer of soil; it lives only in the deepest, finest loam. They can grow singly, in scatters, or in vast stands—called a cohune ridge—where they dominate all other species.

Because cohunes signal good soil, they are felled along with the rest of the forest when the land is cleared for planting. But cohune roots bore deep and a shoot can grow for seven to ten years underground. Despite cutting or fire, a young shoot bears new leaves every few weeks. People regard the cohunes as weeds, constantly sprouting up in sown fields. The whole genus is known for this tendency. Some farmers, when clearing land for cattle, opt to leave the largest cohunes; they are difficult to cut down and, more important, cast a pool of shade for livestock.

A skirt of hundreds of fruit litters the ground surrounding a cohune; the drupes ripen in December and become driest in May (McSweeney 1995). Hard as a stone and wrapped in husks, each bit of the oblong fruit can be consumed. **Agoutis, scarlet macaws,** cattle, and others seek out the fruit and eat away the tough outer layer (Aguilar and Aguilar 1992). People gather the fallen fruits to store them through the off season. Cracking open the fruits can be difficult, although experts report they can crack two to three fruits in a minute. Inside lie one to five kernels, each consisting of about 65–70 percent oil. People mash the kernels with a long pole and squeeze out the yellow cohune fat, which tastes like coconut but smokier. The entire process of extracting, boiling, stirring, and skimming takes three days (McSweeney 1995).

The cohune has never caught on with big business. Many attempts to commercialize it report that the variance in the number of kernels in each

drupe prevents a sure profit. A few men try to improve their milpa earnings. On some farms, the fat is fried in the rich cohune fat. Also, some use the fat to make candles, but that is not as common now. Some people use the fat to feed some birds, but some feed the epicarp to their chickens, which burns slow and even. The fat is used to make paper, which is made into fibrous reeds and is then used for thatch. Cohune have been reported in Belize and Guatemala (Aguilar and Aguilar 1992; Johannessen 1992).

People eat the heart of the palm. The heart is made by stripping the fronds away, leaving the heart, which has the hearty texture of meat (McSweeney 1995). The heart is eaten with the sap drawn from the heart and letting the sap drain out. After a week fermentation the heart is eaten (Aguilar and Aguilar 1992).

Protium copal

COPAL TREE *Copal, Incien-*

Identification: Reaching up to 30 m (often much smaller), a copal tree has a thick, dark bark and fragrant resin. Its dark green leaves are long and are a good way of identifying the tree in clusters and, once pollinated, give off a strong, long-lasting odor (Aguilar and Aguilar 1992).

Habitat: Copal trees populate tropical savannas (Lundell 1937), preferring open areas (Aguilar and Aguilar 1992).

Range: It grows in tropical regions throughout Central America (Record and Heilbrunn 1992).

Similar species: Ninety or so species of copal trees range from small to large trees.

THE COPAL TREE'S resinous sap has been used in rituals for thousands of years. The sap, milk, tears, and resin are all used in rituals. The gods become manifest. It is

is preferred, but in many areas the rise of tourism and its demand for the scarce to almost extinct in local the cohune palm's abundance as Maya, having fled the violence of the palms for thatch. People say and, everyone knows, thatch keeps sun. But palm roofs are giving way mice (hence fewer snakes chasing s a matter of keeping up with the

e huge fronds drop to the forest ing into black earth. Farmers call in the deepest, finest loam. They s—called a cohune ridge—where

are felled along with the rest of ting. But cohune roots bore deep underground. Despite cutting or y few weeks. People regard the in sown fields. The whole genus when clearing land for cattle, opt ilt to cut down and, more impor-

ound surrounding a cohune; the est in May (McSweeney 1995). h bit of the oblong fruit can be le, and others seek out the fruit and Aguilar 1992). People gather off season. Cracking open the ort they can crack two to three nels, each consisting of about ith a long pole and squeeze out conut but smokier. The entire d skimming takes three days

g business. Many attempts to he number of kernels in each

drupe prevents a sure profit. A few people in Belize press the oil to supplement their milpa earnings. On special occasions plantains and beans are fried in the rich cohune fat. Also, at one time, the fat was folded into soaps, but that is not as common now. People feed the kernel mash to pigs, and some feed the epicarp to their chickens. They use the endocarp as fuel, which burns slow and even. The stem of the fruit is beaten until it splays into fibrous reeds and is then used as a flybrush. Many of these uses of the cohune have been reported in Belize, Guatemala, and Honduras (Aguilar and Aguilar 1992; Johannessen 1963; McSweeney 1995).

People eat the heart of the palm, but the cutting out of it kills the plant. With the fronds stripped away, left in the center is a stump of heart that has the hearty texture of meat (McSweeney 1995). Carving out a round cavity in the heart and letting the sap drain into the hole is not an uncommon practice. After a week fermentation begins, and people drink the heart-sap wine (Aguilar and Aguilar 1992).

Protium copal

COPAL TREE *Copal, Incienso (S) Poom (M)*

Identification: Reaching up to 30 m in height and 50 cm around (although it is often much smaller), a copal tree can be recognized by its smooth, pinkish gray bark and fragrant resin. Its dark green, leathery leaves measure 10–18 cm in length and are a good way of identifying the tree. Cream-colored flowers grow in clusters and, once pollinated, grow into smooth, single-stone fruits 1.5–3 cm long (Aguilar and Aguilar 1992).

Habitat: Copal trees populate tropical wet forest as well as pockets of forest in savannas (Lundell 1937), preferring areas with heavy shade and well-drained soil (Aguilar and Aguilar 1992).

Range: It grows in tropical regions around the world but within the Maya area appears at sea level to 400 m from Veracruz and Oaxaca, Mexico, down through Central America (Record and Hess 1943).

Similar species: Ninety or so species from the *Protium* genus exist worldwide and range from small to large trees (Record and Hess 1943).

THE COPAL TREE'S resinous sap, sacred to the Maya, has been burned in rituals for thousands of years. Dew, human sweat, rust, blood, a mother's milk, tears, and resin are all substances called *itz* through which the Maya gods become manifest. Itz is the life-giving force and a gift from the gods;

*Brosimum alicastrum***BREADNUT** *Ramón* (S) *Chak óox* (M)

Identification: Growing as high as 40 m and as large as 1 m in diameter, the ramón has a smooth to scaly silver trunk. A runny, bitter-tasting white latex saturates the inner bark. The oval, greenish gray leaves never drop completely. Copious amounts of small creamy-colored flowers bloom, and once impregnated swell into oval green fruits. Once ripe, they measure 2–2.5 cm in diameter and are similar to apricots. Wrapped around a 1.2 cm long seed, the thick layer of pulp tastes sweet (Ortiz et al. 1995).

Habitat: The tree grows in tropical wet and dry forests (Ortiz et al. 1995), often in dense stands called *ramonales*.

Range: The ramón tree grows throughout tropical habitats, from just above sea level to 2,000 m, of southern Mexico, Belize, Guatemala, El Salvador, and Honduras, as well as on Caribbean islands and Hawaii (Ortiz et al. 1995).

Similar species: Four species of *Brosimum* have been identified in Guatemala: *Brosimum alicastrum*, *B. panamense*, *B. costarricanum*, *B. terrabanum* (Ortiz et al. 1995). In Costa Rica down to South America lives *Brosimum utile*, a tree that produces a white, drinkable latex; its common name is translated as “cow tree” (Record and Hess 1943).

AS MAYA CENTERS grew, most of the surrounding jungle and its trees were cut down; however, trees with special uses, such as the ramón, were left standing. After the centers were abandoned in the tenth century and the jungle began to grow, selected trees like the ramón, already abundant and fully mature, were able to outpropagate many of the other species in the forest. This head start, the theory goes, may explain the ramón's present abundance around ruin sites (Lundell 1937; Puleston 1982). Many scholars believe that ramón trees grow where soils and general ecological conditions best support them, such as in the limestone rubble of ruins (Ortiz et al. 1995). Another idea credits bats living in fallen temples. As bats carry and then feed near their roosting sites on large amounts of ramón fruits, the ramón seeds are left to germinate in the area (White and Darwin 1995).

Ramón is considered an important tree, primarily because of its edible and abundant fruit. Ramón contains a higher quality of protein than maize, as well as other important nutrients. In present-day Yucatan, the Maya cultivate ramón trees around their homes (Rico-Gray, Chemas, and Mandujano

Ramón (*Brosimum alicastrum*)

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Ramón (*Brosimum alicastrum*)

1991), eating the flesh of the fruit and boiling the seeds; the cooked nut, or seed, tastes similar to a chestnut.

A single tree can yield 12,000 fruits per fruiting and may do so several times a year; the ground becomes engulfed in a skirt of fruit during the bearing season (Coelho et al. 1976). **Mexican black howler monkeys**, **Central American spider monkeys**, birds, and other mammals pick the fruits from the trees, taking bites of the sweet flesh (called *ox* in Mayan) and dropping the rest. Once the drupes fall, **spiny pocket mice**, **agoutis**, and **Deppe's squirrels** feed on the seeds. **Morpho butterflies** (DeVries 1987), as well as other insects and fungi, consume the rotting fruits. Unharmed seeds germinate in 3–5 weeks (Burkey 1994).

Dennis Puleston found that in the wild, twenty-five ramón trees on average produce annually 1,763 kg of food per hectare. Maize produces only 324 kg per hectare per year. Ramón yields can vary greatly from season to season and, if planted in optimal conditions, the trees produce far more than when in the wild. A hectare of land planted with ramón trees, or even half a hectare, can easily feed a family. Puleston calculated that if a family grew ramón trees around their home, a few family members working one to one and a half hours a day during fruiting season (7–10 weeks) could collect enough food to last them a year (Puleston 1982). Puleston began to wonder if the ancient Maya relied on ramón fruit equally, if not more than, maize as their major source of starch.

Chultunes, the stucco-lined underground chambers found at various ancient Maya sites such as Tikal and many others, may have been used for storing and preserving ramón fruit. Puleston found that ramón seeds remain fresh and edible even after 13 months of storage in the chambers, while other foodstuffs germinated, rotted, were infested with mites, and were consumed by fungi within weeks. The ramón seed's survival may be due to its water content of 6.5 percent, which is low compared with that of dried beans (12 percent) or dry corn (10.6 percent). In addition to possibly storing food, some chultunes, depending on the site, stored water and grain (Puleston 1971). As Dennis Puleston worked with the idea that the ancient Maya relied heavily on ramón fruits, he was struck by lightning, his work and provocative ideas left far from complete.

In modern times, ramón fruit is eaten whole or ground into a black flour, helping to stretch the maize supply (Lundell 1937), and frequently prepared as a hot *atole* (mush) with honey. A baby can drink the watery, milklike sap as a substitute for mother's milk (Arvigo, Yaquinto, and Epstein 1994), al-

though it tastes extremely bitter. It is soaked up with a bit of cotton and used for medicinal purposes (Puleston 1998). Fed to livestock, the leaves are used for the nutrition of nursing animals (Puleston 1982). The leaves were also used in diviners' rattles, and the seeds were used in diviners' rattles, in addition to their use as a food source. Although its wood is strong, it rots easily (Record and Hess 1943).

Cedrela odorata

SPANISH CEDAR *Cedro* (S)

Identification: Its trunk, covered with lenticels, is 15 m before beginning to branch; the ends of twigs grow bunched pairs (or longer when young) and drop in the dry season. The petals longer than they are wide, grow in pairs, and the ovary is oval, 5–7 cm in length that open into 10–15 seeds (1 cm in diameter), papery in the dry season. The roots buttress the trunk, extending outwards to prevent the tree from being blown over in high winds.

Habitat: The Spanish cedar has a wide distribution in well-drained soils, where it grows tall and straight. It appears in a gnarled, stunted form in the dry season and occurs in tropical wet forests.

Range: Indigenous to Central and South America, from sea level to 3,000 m (in some areas) and as far south as Argentina (Lamb 1968).

Similar species: *Cedrela mexicana*, a similar species, also grows in the area.

Warning: Spanish cedars face extinction and are being dropped by at least 25 percent over the last century. It is time to do so (IUCN Species Survival Commission 1994).

A SPANISH CEDAR does not begin to rot for 20 years. Although they take time to rot, they last for centuries. Its pale, pinkish brown wood is lightweight yet strong (Lamb 1968).

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though it tastes extremely bitter. The resin is also a soothing remedy when
 soaked up with a bit of cotton and placed around a rotting tooth (Lazaro
 1998). Fed to livestock, the leaves in particular are said to enrich the milk
 of nursing animals (Puleston 1982). The fodder was an important source of
 nutrition for the mules of colonialists and more recently for the beasts of
 burden of chicleros harvesting **zapote** (Pohl 1999). In past times the seeds
 were also used in diviners' rattles, in Mayan called *topp-ox-kab* (Roys 1931).
 Although its wood is strong, it rots easily, giving it a low commercial value
 (Record and Hess 1943).

Cedrela odorata

SPANISH CEDAR *Cedro* (S) *K'u'che'* (M)

Identification: Its trunk, covered with gray, fissured bark, extends straight up for
 15 m before beginning to branch; the entire tree can reach 50 m in height. From
 the ends of twigs grow bunched pairs of thin leaves that measure 6-17 cm long
 (or longer when young) and drop in the dry season. Small white blossoms, with
 petals longer than they are wide, grow in bunches, too. The ripe fruit are brown
 ovals 5-7 cm in length that open into five-pronged stars. Inside sit 30 to 40 oval
 seeds (1 cm in diameter), papered in a translucent brown wing case. In larger
 trees, roots buttress the trunk, extending 3-4 m up its base; they help prevent
 the tree from being blown over in high winds (Lamb 1968).

Habitat: The Spanish cedar has a wide range of habitats as it can survive in
 well-drained soils, where it grows tall and strong, or in areas of little rainfall,
 where it appears in a gnarled, stunted form. It prefers areas with a distinct
 dry season and occurs in tropical wet and dry forests (Lamb 1968).

Range: Indigenous to Central and South America, the Spanish cedar ranges
 from sea level to 3,000 m (in some areas) along the Pacific coast of Mexico as
 far south as Argentina (Lamb 1968).

Similar species: *Cedrela mexicana*, a similar species with the same common
 name, also grows in the area.

Warning: Spanish cedars face extinction in the wild as their populations have
 dropped by at least 20 percent over the past ten years and are expected to con-
 tinue to do so (IUCN Species Survival Commission 2001).

A **SPANISH CEDAR** does not begin to flower and bear fruit annually for ten
 years. Although they take time to establish themselves, they can live for
 centuries. Its pale, pinkish brown wood darkens when exposed to the air
 and is lightweight yet strong (Lamb 1968). The ancient Maya felled the giant

Constancia

Asunto: Apoyo a la traducción al español de textos editados en inglés de árboles de la región para utilizarlos como material para formación de guías locales.


A quien corresponda:

Los integrantes del comisariado ejidal aquí firmantes avalamos la utilidad de la traducción que realizará Luis González Dodd como alumno de la carrera de Lengua Inglesa con especialidad en traducción para presentarlo como su trabajo final en la Universidad de Quintana Roo.

Entendemos que esta traducción es del libro editado por la Universidad de Austin, Texas, en los E.E.U.U. bajo el nombre: *Animals & Plants of the Ancient Maya, A Guide* (Una Guía de Animales y Plantas de los Antiguos Mayas) donde se describen los árboles que todavía prevalecen y dominan la zona maya y de manera especial en nuestro ejido Chacchoben ubicado en la región sur del estado de Quintana Roo.

Poner al alcance de los guías locales presentes y futuros información bilingüe confiable y veraz que puedan transmitir a nuestros visitantes es de suma importancia pues permite difundir de manera profesional conocimientos sobre nuestros espacios, nuestro patrimonio natural y cultural, y nuestra historia. Esto nos es demasiado útil contar con ello, en español como en inglés pues cientos de miles de turistas vendrán a visitarnos pronto.

Agradecemos de antemano la atención que presten a la presente para lograr contar con un librito (inglés-español) que nos aporte los beneficios mencionados.


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Secretario


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Tesorero

15 January 2008

Luis González-Dodd

5ª Avenida No. 2012, esquina calle 48. Correo postal en apartado postal/PO Box #7.

Bacalar Lagoon

77930 Quintana Roo

Mexico

Dear Mr. González-Dodd:

Re: ANIMALS AND PLANTS OF THE ANCIENT MAYA: A GUIDE by Victoria Schlesinger, Copyright © 1999

Since I handle most permission requests Laura Bost asked that I handle your request from last November to translate pages 103 to page 146 of the above title into Spanish. The translation would be used to fulfill requirements for your degree of English language with a major in translating at the Universidad de Quintana Roo (UQRoo) in Chetumal, Quintana Roo State, Mexico.

First we want to apologize for the delay in responding to your request. We are required by contract to get the author's approval for this type of use and we've only just heard back from Victoria Schlesinger. She has given her consent.

Therefore, we are happy to grant you non-exclusive, one-time permission to translate the pages you've requested for your degree. This permission is granted provided that you give full credit to the book, the author, the University of Texas Press as publisher, and the year of copyright. No other use may be made without the written permission of the University of Texas Press.

You had also inquired about the possibility of using your translation in local guidebooks. Though both Victoria Schlesinger and the University of Texas Press like the idea of using the translation in a guidebook, this permission is limited to the use of the material for your coursework at the Universidad de Quintana Roo only. Should you decide to use the translation for local guidebooks please send us another request.

Regarding use of the illustrations in guidebooks, the illustrator, Juan C. Chab-Medina, controls rights to those. Victoria Schlesinger is contacting him on your behalf and will let us know his decision.

Best wishes,

Peggy L. Gough

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De: "jcm Medina@uady.mx" <jcm Medina@uady.mx>

A: "luis Gozalez-dodd" <luisgdodd@yahoo.com.mx>

Estimado Luis González Dodd

He leído su solicitud expresa para la utilización de algunas de mis ilustraciones en el libro ANIMALS & PLANTS OF THE ANCIENT MAYA: A GUIDE/ Victoria Schlesinger, First edition, 2001. ISBN 0-292-77760-4 (FI435.E.E73. S35 2001) 578'.0972-dc21, referente a especies vegetales como: pimienta, cacao, ceiba, chakaj, coroso, copal, caoba, ramón, cedro, vainilla, y zapote, para lo cual no encuentro inconveniente alguno para su empleo, siempre y cuando se mencione en los créditos, por otro lado espero gustosamente poder contar con una copia de su trabajo.

Sin mas por el momento, reciba un saludo cordial

Atentamente

Biol. Juan Carlos Chab Medina
Cuerpo Académico de Arquitectura y Medio Ambiente
Fac. de Arquitectura-UADY

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