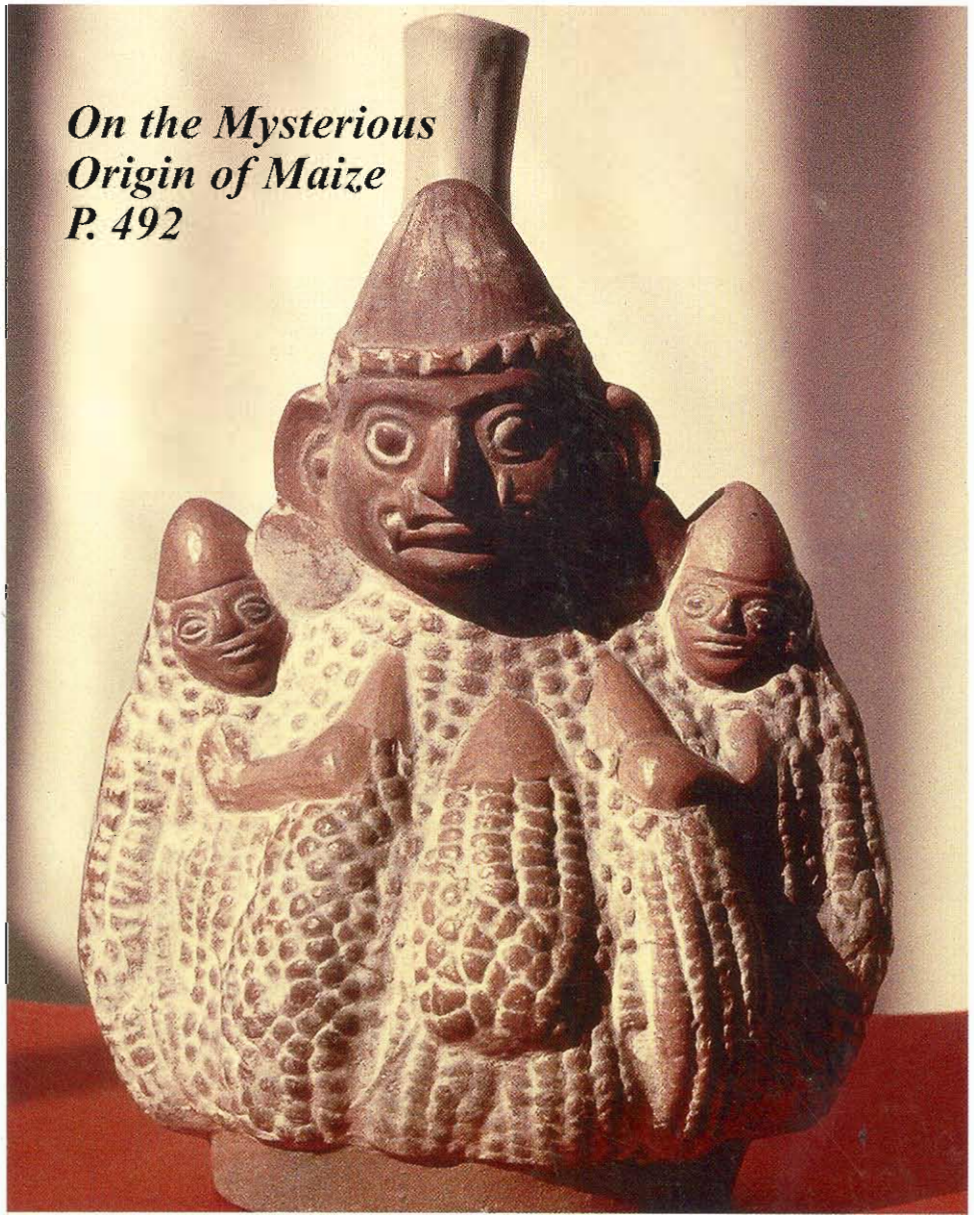
Economic Botany

Vol. 55 No. 4
October–December 2001

Devoted to Past, Present, and Future Uses of Plants by People



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Published for
The Society for Economic Botany by
The New York Botanical Garden Press
Issued 7 February 2002

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ECONOMIC BOTANY (ISSN 0013-0001) is published quarterly for $95.00 per year for U.S. orders and $104.00 per year for uon-U.S. orders by The New York Botanical Garden Press, Bronx, NY 10458-5126, for the Society of Economic Botany. Periodicals postage paid at Bronx, NY and additional mailing offices. POSTMASTER: Send address changes to The New York Botanical Garden Press, Bronx, NY 10458-5126 U.S.A.

HAT WEAVING WITH *JIPI*, *CARLUDOVICA PALMATA* (CYCLANTHACEAE) IN THE YUCATAN PENINSULA, MEXICO[1]

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Fadiman, Maria *(Department of Latin American Studies, Tulane University, New Orleans, LA 78751 USA; Present address: Department of Geography, University of Texas at Austin, Austin, TX 78712 USA).* HAT WEAVING WITH *JIPI*, *CARLUDOVICA PALMATA* (CYCLANTHACEAE) IN THE YUCATAN PENINSULA, MEXICO. *Economic Botany 55(4):539–544, 2001. Weaving hats with* jipi, Carludovica palmata *(Cyclanthaceae) has built the local economy and cultural identity for the people of Becal, in the Yucatán Peninsula, Mexico. They obtain most material from cultivated sources, weave in man-made caves, and market the goods to commercial centers. Because* Jipi *does not appear to deplete the soil, they do not need to clear more land for sustainable production. Although weaving traditionally served as the main source of income and social activity in Becal, interest in weaving is declining as the town modernizes. Although profits gained from weaving add to family earnings, because of the many hands through which the hat passes, this income remains low compared to the final selling prices. Thus, many who have the opportunity to pursue other careers are doing so. However, for rural communities, without other earning options, weaving may provide an economically and environmentally advantageous way to use the land.*

Key Words: *Carludovica palmata*; Cyclanthaceae; Panama hat; *Jipi*; Becal; Yucatán; Mexico; hat-weaving.

This study examines the weaving of hats using *Carludovica palmata* Ruíz and Pavón (Cyclanthaceae) in Becal, Campeche, Mexico. Hatmaking is one of the major industries of western Yucatán and northern Campeche. The project focuses on Becal, located in northern Campeche (Fig. 1), because of its historical and present status as the hat-weaving center of the Yucatán Peninsula. Extraction of the plant's fibers appears to be sustainable, because the weavers periodically remove only an inner leaf, without killing the plant.

Jipi, the local name for both the growing plant *C. palmata* and for the prepared weaving material, is an integral part of the historical and cultural identity of the village of Becal. The people of the village first wove with *Sabal mexicana* (Arecaceae) and continue to utilize this material (Caballero 1995). However, they also adapted their technique to work with *C. palmata* after its introduction in 1866. Because of its superior strength and flexibility, *jipi* is now the primary source of weaving material. *Jipi* hats, originally woven in Ecuador and now also famous in Becal, are internationally known as "Panama" hats. This misnomer originated during the California gold rush. Beginning in 1849, American miners passing through Panama acquired the hats that had been imported from Ecuador. The construction of the Panama Canal (1870–1911) reinforced this confusion, because many hats made from *jipi* were imported for the canal workers (Alguilar de Tamariz 1988; Bennett, Alarcon, and Cerón 1992; Harling 1958; Miller 1988; Von Hagen 1949).

Carludovica palmata is the most widespread species in the genus *Carludovica*, ranging from Guatemala to Central Bolivia. This species grows in moist tropical forest and in areas of high sunlight. *C. palmata* is a multi-stemmed plant, measuring 1–2 m tall, with flabelliform-parted blades that are as broad as long and made up of four wedge-shaped segments (Harling 1958).

STUDY AREA

Becal lies in the northernmost region of the state of Campeche (Fig. 1). A bed of limestone covered with sparse topsoil comprises the geo-

[1]Received 16 August 2000; accepted 16 March 2001.

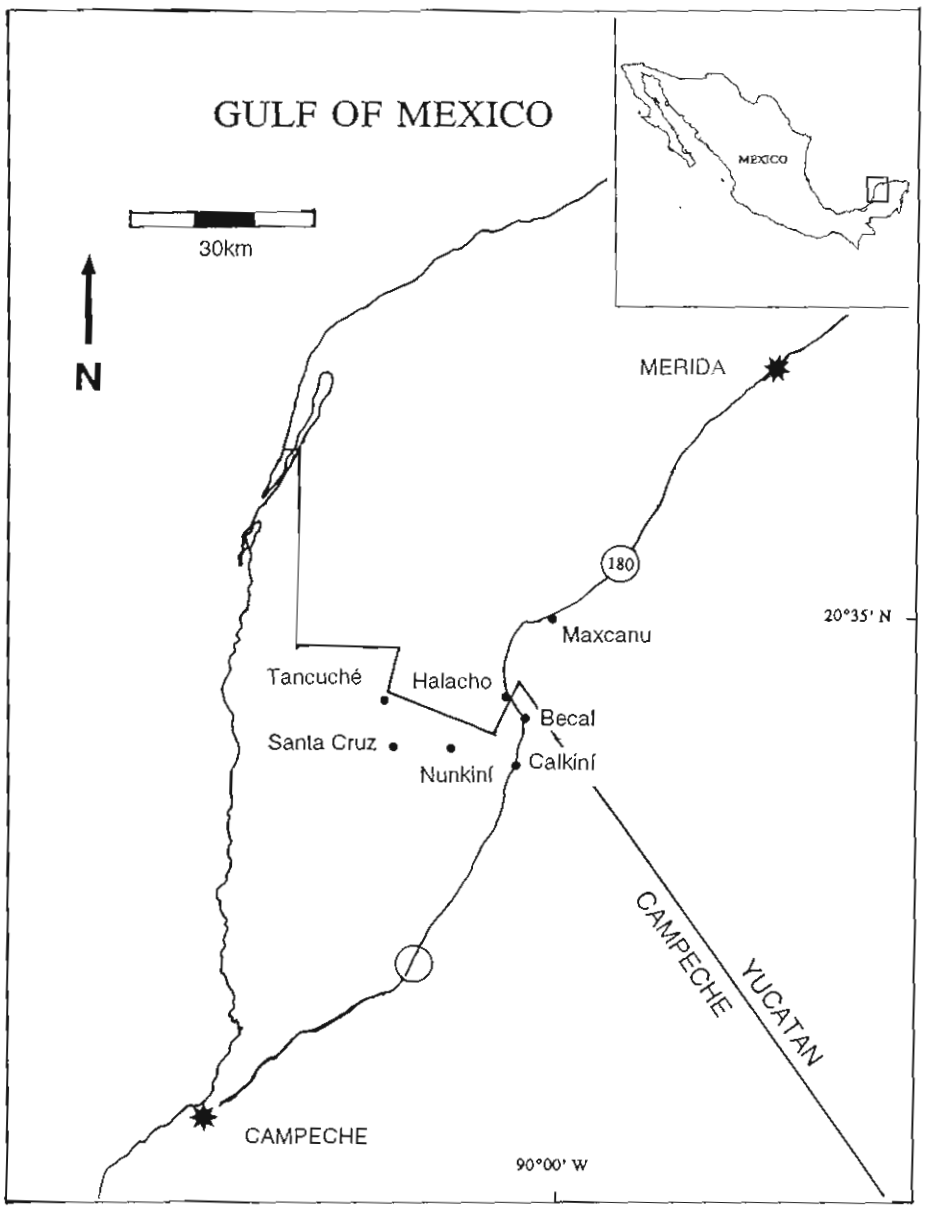

Fig. 1. Map of Northwest Yucatan Peninsula, Mexico, showing towns where *jipi* is grown, processed and/or woven.

logical foundation of this region. The subhumid tropical climate with rainfall of 1000 to 1200 mm per year remains fairly constant throughout the year (Flores and Carvajal 1994; Vogt 1969).

Almost all 6000 residents of Becal are of Maya descent. Although members of the older generations speak Yucatec Maya and Spanish, those of the younger generations learn only Spanish. The education system in Becal now goes through highschool, while the outlying smaller communities still provide only primary education. In addition to hat-making, Becal supports minor industries such as maize cultivation, apiculture, and fruit production.

METHODS

Semistructured interviews were conducted with weavers, processors, cultivators, buyers and one of the original teachers of the first hat-making school from May to August 1996 and February 1997. Supplementing this data are informal interviews with weavers as they wove and processed material throughout town. Also, using a semistructured format, I spoke with cultivators in Santa Cruz and distributors in Becal, Mérida and Cancun. During the research, I lived with a family of weavers who clarified information obtained through the formal interviews. Furthermore, they provided the opportunity for me to learn through participant observation, by teaching me to weave. Ecología Aplicada y Manejo de Ambientes Terrestres (ECOMAT), Universidad Autónoma de Campeche, helped to confirm plant identifications, and dried the voucher specimens. The Tulane herbarium now stores the specimens, with ECOMAT retaining duplicates.

HISTORY OF HAT MAKING WITH *JIPI* IN BECAL

Hat-weaving probably originated with the Spaniards in 1519, as the use of plants to make hats was not an indigenous custom among the Yucatec Maya. The Maya traditionally used unopened palm fronds, of *Sabal mexicana*, to weave sleeping and sitting mats. During the colonial period, the Spaniards sought head protection and asked indigenous people to modify their mat-making practice to accommodate hats (Alguilar de Tamariz 1988; Caballero 1995; Von Hagen 1949). Currently, the people in the region no longer make mats, and during the past five decades hat-weaving has evolved into a major local industry.

In 1866, Don Pablo Montero Ramón, a rubber tapper who worked in Guatemala, introduced *jipi* to the Yucatan Peninsula by bringing cuttings back with him to Becal. The brothers, Don Sixto and Don Pedro García, the most prominent hacienda owners of the region, recognized the superior flexibility, whiteness, and durability of the *jipi* leaf for weaving, and dedicated their hacienda, Santa Cruz, to the cultivation of the new crop. The former hacienda, now the town of Santa Cruz, remains the main *jipi* producer of the region (Cervera 1968; Rosado 1993).

In 1935, the government of Campeche established two schools in Becal where instructors taught children how to weave. The government closed these centers thirty years later, however, because parents took over the instruction of their children. Today, the teaching tradition continues as women from Becal travel to neighboring towns to teach weaving, enabling more people in the region. An example is that the town of Santa Cruz, which used to solely produce *jipi*, is now also becoming a hat-making town.

JIPI SOURCES

The major sources of *jipi* come from plantations and private gardens. Most of these are located in the states of Campeche and Yucatán, within the villages of Halachó, Tancuché, Santa Cruz, Nunkiní, Holoch and Maxcanú (Fig. 1). Only in two of these towns, Santa Cruz and Nunkiní, do residents also weave. Although some *jipi* grows in Becal, the water table is too far below the surface to support large plantations. People also obtain leaves from uncultivated *jipi* in Tabasco. However, they consider the quality of the leaves from Tabasco inferior to that of cultivated *jipi*. Thus, they purchase material from Tabasco only when they are unable to obtain cultivated *jipi*.

Most *jipi* fields in Santa Cruz are about one *mecate* (about 400 m^2), the standard unit of field measurement in the region. Most fields are family owned, with five cooperatives cultivating larger areas of land. All of the plantations in Santa Cruz together cover 80 *mecates*. The planters burn the plots to clear vegetative growth, and then plant rhizomes collected from local plant populations, one meter apart. They fit about 400 plants in each *mecate*. After the initial planting, the rhizome produces lateral buds from which new aerial shoots emerge, creating small clusters of stems. The typical planting of 400 plants per *mecate* results in about 1000 ramets after three years. A *jipi* plant produces a usable leaf every 15 days. Using a small machete, the time required to harvest one *mecate* is about 30 minutes. During the first year after planting, the cultivators weed the fields every few weeks until the adult plants create sufficient shade to inhibit weed growth. They then periodically thin the fields to prevent crowding, selling the excess living plants to neighboring towns for five pesos (1 peso = \$0.12 US) each.

The best quality *jipi* requires about 10 liters of water per plant daily. Cultivators irrigate the plots, filling dirt ditches that run between rows

with water. They rarely use fertilizer, as the soil remains fertile enough to support the populations for extended periods. For example, the plantations in Santa Cruz have been growing *jipi* on the same soil for over 100 years. Only when there is an insect plague do they use insecticide, which costs 15–20 pesos per mecate.

Material Preparation

The first step in processing *jipi* involves separating the leaflets from each other with the fingers, and then dividing each leaflet into thinner strips with a needle (Fig. 2). There are four different levels of hat quality. The narrower the strip, the higher the quality. The first level is the width of the entire leaflet, the second level is the leaflet split into two, with the subsequent third and forth levels following the same pattern. It takes about 10 minutes to strip a frond for a common hat and 10 to 15 minutes more for each additional level of splitting.

After stripping, the processors hang the material over a stick with the base of the leaf perched at the top and the leaflets straddling the pole. They then place them in brick ovens with burning sulfur to whiten the leaves. To finish drying the material, they then hang the leaves in the sun (Fig. 3). After harvesting, the processor must have split and dried the leaves within eight days or the material would rot. Many weavers buy the material already treated and ready for use. They buy each processed leaf from one to three pesos, usually in bundles of 10 or 12.

Weaving

Almost all weaving in Becal takes place in limestone man-made caves where the humid environment keeps the *jipi* soft and supple. Almost every family in Becal digs its own cave, with the size of the room varying in size from 4 to 10 m^2, with ceilings about 1.5 m high. They take abont 15–30 days to excavate, including wall ledges for seating. These caves used to be social centers, with much rime spent in neighbors' caves and with the whole family in one's own cave. Both men and women weave, with those who rely solely on weaving for their income staying in the caves from about 9:00 A.M. until 6:00 P.M., six days a week. Although they spend the majority of the day below ground, they interrupt weaving to tend to other chores, such as washing, cooking and tending their fields.

Two gender-specific hat styles constitute the main hat models. Men's hats are woven tightly, while incorporating decorative spaces throughout the brim and crown on women's hats. Women's hat brims extend out further than those on the men's hats. However, they are cheaper to purchase than men's hats, because the patterns occupy space that would otherwise be filled with

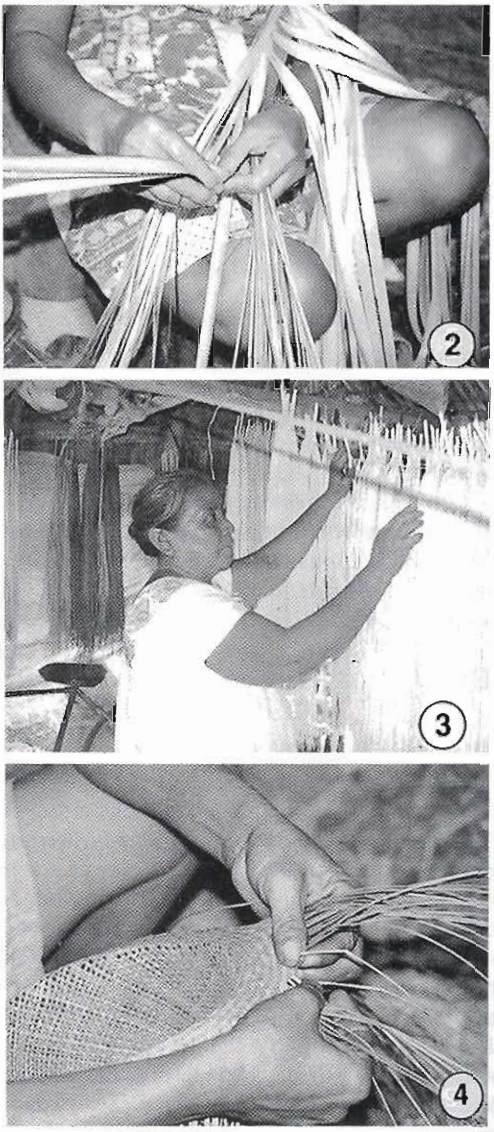

Fig. 2. Processing and weaving of *jipi* in Becal, Campeche, Mexico. Stripping *jipi* leaf segments for weaving.

Fig. 3. Hanging *jipi* to dry after it has been baked with sulfur.

Fig. 4. Weaving *jipi* into a hat.

material. Thus, these hats require less labor and material.

Using the longest segments of the frond, weavers begin the center construction with a small square at what will become the top of the crown. Beginning with seven strips in a rectangular pattern, they add new strips in groups of six from each edge of the initial square. Using a flexible plaiting technique (Adovasio 1977), weavers pass the strips over and under each other at about a 90° angle (Fig. 4). As the crown develops, they smooth it over a cylindrical, sanded, wooden mold. After they weave the hat, it may go to a finisher, someone who trims the edges, and who owns a press. Some customers prefer soft hats, but for those that want the article to retain a shape, the finisher presses each hat with a hot iron into one of 12 different styles. They charge 10 pesos for a single hat, and three pesos for each hat if larger quantities are pressed at one time.

The outermost leaflets of *jipi* are too stiff for making into hats, so weavers sell them to broom-makers in the Maya village of Tepakán, Campeche. The broom-makers pay five pesos for the waste of 10 leaves. The weavers also sell, for one peso each, the leaves that are broken or too small to weave into a hat. The broom-maker attaches these materials to a stick handle with wire, each leaf making one broom, and selling from three to five pesos.

Marketing

The finished hat passes through numerous hands, with the weaver receiving no more than one-fourth of the final selling price. In Becal, there are 10–12 *comerciantes* (initial buyers), each purchasing from 15–60 weavers. Most *comerciantes* sell to merchants in larger cities, while a few work as traveling salesmen and sell directly to customers. Four *comerciantes* have shops in Becal, selling to national and international tourists, and distributors from larger cities. The hat market remains strong, and a weaver rarely encounters difficulties selling hats.

Generally, skilled weavers spend one to two weeks making a hat, with the higher quality articles requiring the most time. They use about nine leaves to make a regular man's *jipi* hat, and eight for a woman's hat. At about 1.5 pesos per leaf, a weaver pays about 13.5 pesos for the materials of one hat, and sells the finished product to a *comerciante* for about 21.5–70 (depending on the quality) pesos per hat. Weavers can earn about 1200 pesos per year, with multiple weavers in each family.

Table 1. Hat[1] selling prices (*pesos*)[2] of the four quality hat levels for the weaver, *comerciante*, wholesaler and retailer in Becal, Merida, and Cancun, Mexico

	Weaver	*Comerciante*	Wholesaler	Retailer
BECAL				
1-Level	21.5	35	50	80
2-Level	30	100	110	180
3-Level	45	130	180	250
4-Level	70	200	300	500
MERIDA				
1-Level	21.5	N/A	35–40	80–95
2-Level	30		100–150	300
3-Level	45		170–200	400
4-Level	70		250–300	500
CANCUN				
1-Level	21.5	N/A	35–40	150–300
2-Level	30		100–150	300–400
3-Level	45		160–200	400–500
4-Level	70		250–300	500–600

[1] Pressed men's hats.
[2] One *peso* = $0.12 US.

Typical hat prices from Becal, Mérida and Cancún vary from 80–600 pesos (Table 1). These three cities act as central distributing centers, selling about 70% of the total hats produced. The distributors in Mérida and Cancún always buy from the same *comerciantes*, receiving most of their *jipi* hats from Becal, Santa Cruz, and Tancuché. Every week each distributor receives 30–40 *jipi* hats, the majority of which they sell locally. There are also various stores in Mérida and Cancún that have their own international export business, shipping to Germany, the United States, Australia, Belgium and Holland.

Conclusion

Since *jipi*'s introduction in the 1860s, people from Becal have takeu advantage of the pliability and durability of the material to become skilled weavers. They built an industry out of which grew the town's economy and identity. The resource thus far has been sustainable, as the soil continues to support plants in plantations around Becal. The plants themselves continue to regenerate and grow new ramets, because the

weavers only utilize some of the leaves. They are conscious to leave enough new photosynthetic material so that the plant continues to grow. Thus, they do not need to clear the forested lands near their fields.

Since weavers make about 1200 pesos per person per year, the earnings allow people to supplement the household economy. Although this is helpful income, the weaver often makes as little as 1/10 the final selling price. If weavers could market their goods more directly, then their income would increase substantially. However, although the market is expanding, interest in weaving among *Becaleños* is declining. Children can now study through high school in Becal, and as they become better educated, many leave for Mérida or Campeche to pursue advanced degrees. They are able to obtain jobs in which they can earn substantially more money than if they continued to weave. What had been central to their way of life as art, a form of livelihood, and as a unifying social activity is now competing with a changing lifestyle. However, in the smaller villages with out the same educational opportunities as in Becal, the adoption of weaving could have beneficial effects. In addition to the tradition remaining alive, weaving is also particularly suited for rural women. Mothers can earn money while remaining with their children at home. Furthermore, weaving with *jipi* can be a successful way to increase their income without clearing more land.

ACKNOWLEDGMENTS

I thank the Mellon Fonndation and the International Programs Council for snpporting the project, and the people of Becal, especially Don Emilio dzul poot, Doña Tina, Blanca, Pedro, Doña Clementina and Don Luciano, and those of Nuevo Becal, particularly Doña Chavela, Pedro, Lupe, Julio, The Abuela, Raimundo, Josephina, Juana, Lázaro, Gabriela, Doña Lucy, Tomás and Norberto. I also thank Ecología Aplicada y Manejo de Ambientes Terrestres (ECOMAT), especially Dr Labougle, Rodolfo, Jorge Sandoval, María Ester and Marcos. I am grateful to Dr. Rafael Duran from CICY, Dr Brad Bennett from Florida International University, and from Tulane University, Ema Uhu de Pech, Dr William Balée, Dr Victoria Bricker, Anne Bradburn, and especially Dr Steven Darwin

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