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Coconut and Other Palm Use in Mexico and the Philippines*

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The Spanish Galleons which sailed between Manila and Acapulco from 1565 to 1815 brought to Mexico merchandise and a limited number of Filipino settlers. In the Philippines, certain aspects of material culture involving palms, especially the coconut, rest in a high degree of dependence of native economies on palms for many needs, ranging from essential foods to raw materials for manufacture and household industries. This dependence is a trait which one would logically expect the Filipino immigrant to the coastlands of southwest Mexico to have brought with him and to have transmitted to local peoples.

Filipino Use of Palms

A basic group of less than two dozen species of palms provide the natives of the Philippines with foods and materials for diverse requirements of the local economy: alcohol, bags, baskets, brooms, brushes, buttons, charcoal, caulking, chairs, dyes, fertilizers, fibers, furniture, fuel, hats, mats, ornaments, raincoats, rattans, slippers, starches, structural materials, sugars, tannin, thatching, vinegars, and wines. Traditionally, the native

has exploited an abundantly distributed group of palms, a sampling of which follows:⁽¹⁾

Areca caliso Becc.—alcohol; ingredient for *ikmó*.

Areca catechu L.—ingredient for *ikmó* (or *buyo*); black and red dyes; edible buds; sheathing leaves for mats, hats, slippers, etc.; source of tannin; vermifuge.

Areca ipot Becc.—ingredient of *buyo*; also an ornamental.

Arenga ambong Becc.—for its edible buds.

Arenga pinnata (Wurmb.) Merr.—the well-known *káong*; vinegar, sugar, starch; edible seeds and buds; soft fiber (*baro*); brushes, brooms, alcohol, *tubá*.

Arenga tremula (Blanco) Becc.—baskets, alcohol, *tubá*.

Calamus spp.—rattans: bent-wood, stick-reed, cane-chairs, and furniture; food and water; structural material; cordage.

Caryota cumingii Lodd. ex Mart.—the *aníbong* fish-tail palms, sources for alcohol, *barok* fiber, starches, structural materials, *tubá*.

Cocos nucifera L.—*niúg*, for baskets, brooms, brushes, coir fiber, charcoal, fertilizer, food, oil, fuel, utensils, thatching, structural material, vinegar, and wine.

Corypha elata Roxb.—alcohol, bags, baskets, beads, brooms, *burí* and *buntal* fibers, foods, mats, slippers, starches, sugars, thatching, vinegar, *tubá*.

Daemonorops spp.—rattans.

Heterospatha elata Scheff.—*buyo* ingredient, food, pith-helmets.

Livistona rotundifolia (Lam.) Mart.—(*anáhu*, *palma brava*), structural mate-

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rials, troughs and flues, poles, flooring, food, thatching, palm-leaf raincoats.

Livistona saribus (Lour.) Merr.—brooms.

Metroxylon sagu Rottb.—alcohol, fiber, food, mats, starches, thatching, structural materials, *tubá*.

Nypa fruticans Wurm. —alcohol, bags, brooms, fibers, edible seeds, pith-helmets, mats, palm-leaf raincoats, sugars, thatching (perhaps the most resistant to the elements), vinegar, *tubá*.

Phoenix loureirii Kunth.—palm-leaf raincoat.

Veitchia merrillii (Becc.) Moore—the so-called *buñga de china* or *buñga de joló*, often employed as a substitute for *Areca catechu* in the preparation of *ikmó*, the universal Filipino masticatory consisting of betel pepper, lime and areca nut.

The wide availability of these and many other species of palms in limestone formations, dense humid woods in mountain slopes, in secondary forests, sylvan areas, along tidal streams, and in fresh and brackish-water swamps provided native settlements with products sufficient to support town industries. Outstanding, by far, in the historical and economic geography of many Philippine areas are *Nypa*, *Arenga*, *Calamus*, *Corypha*, and *Areca*. The primacy among palms everywhere, from coastal areas to inland elevations up to 4,500 feet, belongs to the coconut palm.⁽²⁾

Mexican Utilization of Palms

In sharp contrast, the palm family in Mexico is represented rather poorly by a relatively small number of economic species. The family is better represented in the economic flora of central and southern America. Apart from the introduced *Cocos nucifera* the most valued individuals of *Palmae* restricted to the southwest Mexican coastlands are some members of the genera *Sabal*, *Cryosophila*, *Brahea*, *Orbignya* and *Acrocomia*.⁽³⁾ The follow-

ing is a sampling of palms of some economic value in southwest Mexico:

Sabal mexicana Mart.—*palma redonda* of Michoacán and Guerrero; *palma real* or *de micheros*, used as thatching or for chair seats; edible fruits (*micheros*).

Washingtonia robusta H. A. Wendl. *palma blanca*, *palma colorada*, *palma negra*; and *Washingtonia filifera* (Lind.) H. A. Wendl. are commonly cultivated, with some importance for thatching, baskets, cordage, food.

Cryosophila nana (H.B.K.) Bl.—*palma de escoba*, or *soyamiche* of Michoacán and Guerrero.

Brahea dulcis H.B.K.—structural material, thatching, food.

Brahea spp.—*palma blanca*, *palma negra*, *palma de Tlaco*; edible pulp and buds.

Phoenix dactylifera L.—widely cultivated. It is interesting to note that the term *dátil* is given to *Muntingia calabura* L. and more often, in northern Mexico, to *Yucca* spp. However, *dátil* in the Philippines is applied to the fruit of *Phoenix*, and appears in native dialects everywhere as such or in phonetic variants (*látires*, *rátiles*, etc.).

Calyptrogyne ghiesbreghtiana (Lind. & H. A. Wendl.) H. A. Wendl.—thatching.

Chamaedorea tepejilote Liebm. ex Mart.—edible spathes.

Orbignya cohune (Mart.) Dahlg. ex Standley

Acrocomia mexicana Karw. ex Mart.—*coyol*, edible; also an intoxicating liquor.

Bactris spp.

In considering the list just given and that for the economically useful palms of the Philippines, some points are to be noted:

1. *Brahea dulcis* is comparable to *Corypha elata* of the Philippines in economic value. The Mexican species is found

from Nuevo León and Sinaloa in the north to Oaxaca in the south, and is known in Michoacán and Guerrero as *cocoíste*, *palma dulce*, *palma de sombrero*, *palma soyal*, etc. It is also often used as structural material, thatching and food. In spite of a wide geographical distribution, its usefulness is known but not exploited.

2. *Cocos nucifera* (known generally only in the *coco*-series, such as *cocotero*, *palma de coco*, *coco de agual*, *coco decastillo*, etc.) is cited by Standley as being put to many uses in Mexico (structural material, rafts, thatching, *tubá*, food, milk, vinegar, containers, etc.) approximately the same uses as those obtainable from *Orbignya cohune*. However, as far as one was able to observe in the *tierra caliente* of the southwest coast, most of the recorded uses for coconut could not be verified. Apart from the exploitation of the copra, other utilization was sporadic or non-existent.

3. It is evident that there is almost no correspondence between the Palmae of Mexico and those of the Philippines. A vexing puzzle is why *Arenga*, *Nypa*, *Corypha*, and *Calamus* were not introduced in southwest Mexico, in the valley of Tecmán, in San Blas and Manzanillo, and in the lowlands of the Balsas and in Guerrero, in spite of a long history of contact, through trade and migration, between the Pacific coastlands of Mexico and the Philippines.

The Coconut Palm

The Coconut in the Southwest Mexican Coastlands. The problem involving the center of origin of the coconut palm—whether in the Old World regions such as Indonesia and Malaysia, following de Candolle, or in New World tropical coasts as proposed by Cook—is a problem that enters only remotely in considering the role of the coconut palm in transplanting significant elements of southeast Asian culture in Mexico.⁽⁴⁾ It is quite certain that

a culture complex based on the coconut palm antedated the European in the southeast Asiatic tropics. In the Pacific tropics of the New World the coconut palm was to be found in at least the coastlands from Panama to Colombia around the 1520s. Quite interestingly, it appears from Bruman's researches that the coconut was not introduced in southwest Mexico until 1539 (probably in Colima).⁽⁵⁾ The date is significant because it shows the relative newness of the coconut palm grove as an element of the landscape and the native economy in southwest Mexico at the time of the entry of Spain in the Philippines in 1565. The early historical evidence reviewed by Bruman attesting to the presence of the coconut palm in the New World shows the lack of any definite culture complex associated with it locally, apart from the consumption of its nut. It may explain why members of López de Legazpi's expeditionary staff, who could be assumed to have had fair knowledge of the native economies in at least sections of the southwest coast of Mexico, do not appear to have been familiar nor cognizant of the uses of the palm. Their encounter in the Visayas islands with the versatile exploitation of the palm was apparently quite a revelation to them.

Forty years after the probable date of introduction into Colima, the coconut palm groves do not appear as yet to have any strong impact on the economic geography of southwest Mexico. It is definitely known that coconuts were abundant in Colima in 1587, but curiously enough, some *relaciones geográficas* touching on the coastlands either make no mention of coconuts or mention them only incidentally. The "Relación de Tancítaro", for example, goes into details about the productiveness of the *tierra caliente* and the commerce in tropical fruits, without mentioning the coconut at all. Colima "is Spanish with more than forty households . . . these Spaniards make a living from growing cacao trees and livestock raising . . . also

they plant large amounts of maize and cotton: they cannot cultivate either wheat or barley because of being in the *tierra caliente*. Colima is situated between seven and eight leagues from the ocean. Sailing by and visible from land are ships that come and go from China and some put in for provisions on that coast."⁽⁶⁾ There is no mention of the coconut palm.

Tubá. Although the galleons were not the means through which *Cocos nucifera* was introduced into the southwest coast of Mexico, they were instrumental in bringing Filipinos to the area who acquainted natives and Spaniards alike with the economic potential of the coconut.⁽⁷⁾ The Mexicans could have had, of course, no better masters. It is well known that the use of the palm by Filipinos is almost a complete one and, in many regions, constitutes an integral part of the total local economy. As a German traveler expressed it: "Where the coconut palm thrives, the people not only use it as a source of food and drink, but also use the wood and leaves for making their hats, tools, furniture, etc. On the beach in the poorest type of soil and without human assistance high yields are obtained. However, inland it is only with great effort that the palm will produce much fruit."⁽⁸⁾

When Asiatics first scattered themselves in native settlements in the *tierra caliente*, one really familiar and nostalgic landscape that must have caught their eye was that of coconut groves. It would not have taken the migrant long to see how the palm was being utilized, and to realize that he had much to contribute to the Mexican Indian's knowledge of the value of the coconut. However, the use of the sap of palms was not altogether unknown in Middle America. Use was made of the sap of *Acrocomia* spp. and *Scheelea butyracea*, a pattern limited to central American regions. The juice was not obtained from the palms in the same manner that the sap of the coconut (as well as of the *Nypa* and *Corypha* palms) is

extracted, viz. by bruising and cutting into the inflorescences. The pith of *Acrocomia* and *Scheelea* was macerated.⁽⁹⁾

Tubá, as a fermented beverage and also as a brandy, was introduced to the Spaniards on the occasion of Magellan's entry in the eastern central Visayan islands of the Philippines in 1521, almost simultaneously with the campaigns of conquest in the highlands of Mexico. The welcome given to Magellan and his men was in the best Filipino traditions of hospitality. The festive board placed before the Spaniards featured, among a host of items, some strips of sago palm sauteed in oil, birds, fruits, and a liquor which was said to flow from the branches of the palm trees.⁽¹⁰⁾ The palm trees would not necessarily refer to the coconut palm but to any one of several species as well which also yield a sap that is generically called *tubá*, e.g., *Caryota cumingii*, *Corypha elata*, *Arenga pinnata*, *Arenga tremula*, *Nypa fruticans*, and at one time but out of favor, also from *Metroxylon sagu*.⁽¹¹⁾

It is significant to note that the accounts dealing with López de Legazpi's first months of reconnaissance in the Visayas islands in 1565 show an apparent lack of acquaintance of the Spaniard with *tubá*. Estévan Rodríguez, relating a trip made to Binglás island (present Negros Island) to survey coastlands, reports: "We encountered an old native man and woman, along with a boy; when they saw us coming they were astonished. We told them they had nothing to fear, that we had not come to do them any harm, and that we were friends. Once they were assured of our intentions, they gave us plantains and wine of the coconut palm which was good and resembled a spurious sweet wine."⁽¹²⁾

The appreciation for the brandy was instantaneous, so to speak. For the return trip of the *nao capitana*, among provisions secured was an eight month's supply of what was probably palm brandy. Alfonso de Arellano claims that in Mindanao island

the natives welcome them with considerable amounts of palm wine. "They brought out large, thick bamboo stem segments filled with wine and offered some to us, but before we could drink one of them took some to show that it was good and not poisoned, we then shared drinks with them. The wine was sweet and tasted somewhat like gin; its color resembled cinnamon water, which they probably add to give it the color it has."⁽¹³⁾

The Spaniards gave free rein to their thirst to the degree that disciplinary measures had to be taken to ensure right conduct in the affairs of the infant settlement in Cebu, and an understanding entered into between local chieftans and López de Legazpi.⁽¹⁴⁾

After the stress and strain of pacification was almost over around the 1570s, and friendlier contact had been achieved between Spanish and native communities in central Luzon valley, in southeastern Luzon and in the coastlands of Ilocos, native drinks became better known and appreciated. Testimonies of Loarca, Ríos y Coronel and Chirino unfailingly mention palm-wine with expressions of wonder at the uses of the coconut. Loarca reports that "one Indian can in one forenoon obtain two arrobas of the sap from the palm-trees that he cultivates, that is made into brandy, vinegar, and delicious honey."⁽¹⁵⁾ Chirino acutely observes that "the palms, of which there are many and varied species, are the vineyards and oliveyards of that country," and so much wine, vinegar, and oil are produced that these commodities are exported to other southeast Asiatic areas.⁽¹⁶⁾ Expressing the same undercurrent of wonder at the versatility of the palms, Ríos y Coronel writes: "From this tree they obtain wine, which is the common beverage of that country; strong vinegar, which is good for the table; and milk like that of almonds, to serve with rice, and which curdles like real milk. When it is soft the fruit is like green hazel nuts in taste, and better; and there is a

serum for many ills and infirmities, which is called whey, as it looks much like that of milk. It is there called *tubá*. They make honey from this tree; also oakum with which to caulk the ships, which lasts in the water, when that from here would rot. Likewise they make rigging, which they call cayro; and they make an excellent match for arquebuses, which, without any other attention, is never extinguished. The shoots resemble wild artichokes, while they are tender."⁽¹⁷⁾

It is not definitely known just when the *tubá*-industry began to be actively exploited in the coconut groves of Colima and elsewhere in the southwest coastal settlements under the guidance of Filipinos. The technique could not have taken long to disseminate among the natives. There would be needed only patience to train the inflorescences downwards, bruise and cut them, and collect the flowing sap daily. It seems that the traditional manner of producing *tubá* was adopted by the *colimenses* and used for centuries without modifications, since a visitor to the area in the 1830s describes the technique such as it was always used in Filipino areas: "To obtain this liquid, one hollows a cavity at the top of the trunk where the sap of the tree will collect. It is first of all a sweet liquid of agreeable flavor, but after a few hours of fermentation it acquires a wine-like taste and gives off carbon dioxide in large quantities."⁽¹⁸⁾

One might presume that the appeal of the *tubá* came when natives learned to use the sap to produce the famous *arrak* intoxicant. To the natives, "given to drunkenness" according to the Spaniards, the *arrak* was a comforting drink that rapidly spread in all the communities. The officials expressed alarm when the sales of *tubá*-brandy displaced current Castilian wines from the market. The government stepped in to regulate the new industry in Colima. An ordinance of 1671 brought to light by Bruman contains some interesting facets of the historical geography of *tubá*

fabrication in Colima.⁽¹⁹⁾ In that year the residents of Colima were requesting the authorities in Mexico City to favor their community with an extension of a license to produce *tubá* which, in their opinion, was not an ordinary drink to be classified with other intoxicants. The statement in support of the request was so cleverly worded that it made the potent *tubá*-brandy appear as innocuous as orange juice.

From the text of the ordinance it appears that the cacao plantations provided until 1626 the *modus vivendi* of the Spaniards and natives of Colima. A cyclone that year caused widespread ruin of the plantations. In order to alleviate the subsequent economic dislocation in the region, the Spaniards and the natives turned to a large-scale production of *tubá* for which they were licensed for a period of ten years. The license was renewed upon request several times thereafter: 1637, 1644, 1653, 1664, and in 1668. On the occasion of renewal requested in 1637, the petitioners emphasized the medicinal properties of *tubá* and its non-intoxicating character, "medicinal and by no means noxious," after a study of the matter made by a committee.⁽²⁰⁾ Justifications for subsequent requests for extension of the license varied; in 1653, it was a ruinous fire which consumed Colima and forced her residents to leave town; in 1668, seismic disturbances created havoc in the area and it was explained further that the state benefited from taxes imposed on the industry and was also the support of chaplaincies.⁽²¹⁾

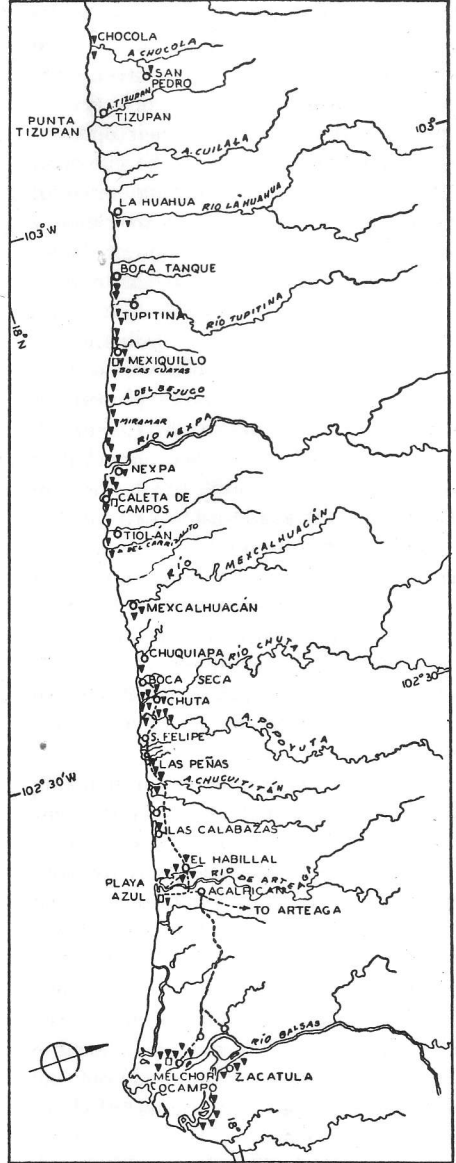
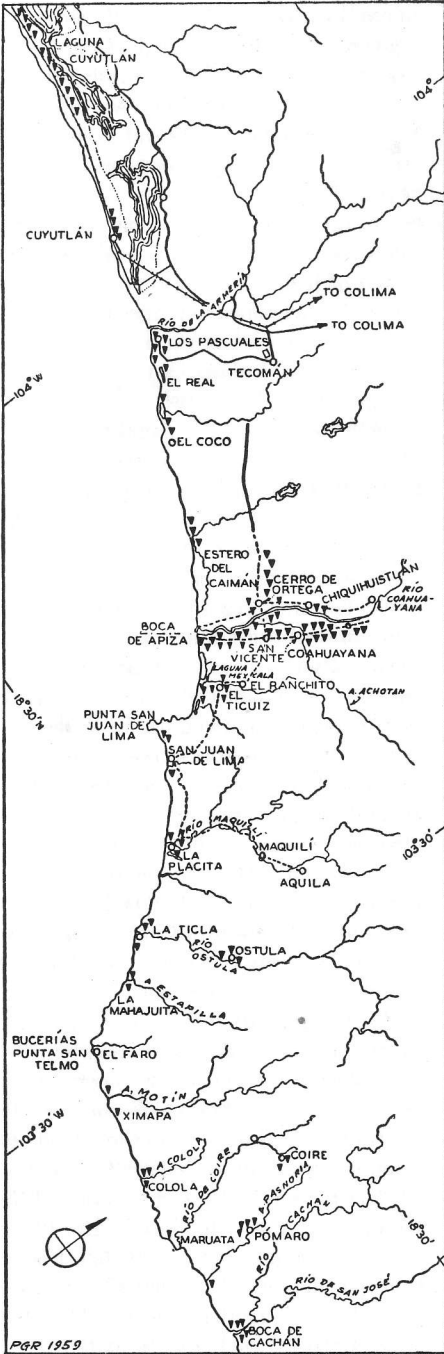
The rapid spread of the *tubá*-industry is confirmed by Pineda's report (1618-20) where he speaks of wine-casks mounted on burros and mules, "so great is the traffic . . . on the coast at Navidad . . . and throughout Colima that they load beasts of burden with this wine as in Spain."⁽²²⁾ In spite of the apparent concern of sincere officials for the health of the natives, the injunction against *tubá*

might have been largely induced by the economies of the situation. *Tubá* production struck at the heart of the trade in Spanish wines. The latter were a source for substantial returns and constituted a straightforward, unencumbered source of revenue.

In the 1830s *tubá* continued to be manufactured in Colima but the significance of it declined in view of the broadened and diversified activities of the region. The coconut groves were being exploited for the copra. Colima City at the time had a population of 15,000; another 25,000 were living in small villages within areas of intensive farming. Fossey, in 1831, found the city to be a veritable paradise of flowers and orchards and an outstanding center for agriculture.

At the present time *tubá* is almost neglected and forgotten in the *tierra caliente* of southwest Mexico except in a few towns where there still are individuals engaged in its manufacture. The people of the coastlands recognize the term *tubá*, but the toddy is found only occasionally in small shops. Very few informants in the coastal villages could give the writer a specific description of *tubá* or the manner of its extraction. The technique appears to survive only among a few peddlers in Colima and in the town of Coahuayana. *Tubá* is also known in some places in the states of Veracruz and Guerrero.

Present Status of Coconut Utilization in the Coastlands. Field work in 1956 took the writer the entire length of the coastlands from Manzanillo to the lowlands of the Balsas, and to the villages and ranchos of Cerro de Ortega, Coahuayana, El Cerrito, San Vicente, El Ticuiz, El Rancho, San Juan de Lima, La Placita, Aquila, Maquilí, La Ticla, Ostula, Pómaro, Coire, Caleta de Campos, Cuilala, Tizupan, La Manzanilla, Tiolán, Mexcalhuacán, Chuta, Las Peñas, Playa Azul, and Melchor Ocampo (Fig. 1). Persons encountered in the villages, many of them old men and women, were familiar with



**SOUTHWEST COAST OF MEXICO-
DISTRIBUTION OF THE COCONUT PALM**

▼ PALM GROVES ~ BRECHA

0 2 4 6 8 10 12 MI.

BASE MAP ADAPTED FROM BRAND, COASTAL STUDY, 1958

tubá but did not know of any place where it was regularly extracted. This was quite remarkable in an area where the landscape was dominated by coconut groves. Actually, few palm groves seen along the coast and strand of southwest Mexico were economically significant, evidently because of barriers of transportation. Coconut stands, large and small, some wild and untended (probably escapes), are found at the following points along the coast (Fig. 1).

Laguna de Cuyutlan: on sand and sandy loam between dunes and the lagoon are extensive plantings of coconut palms. In the middle section of the northern shore of the Laguna is an alluvial plain covered with one of the densest forest of *cayaco* palms in the Pacific coast.⁽²³⁾

Real de San Pantaleón to Boca de Pascales: extensive plantations behind a steep tidal beach and high dunes.⁽²⁴⁾

Tecomán: some eight miles southwest of the plaza in the margin of coconut plantations against the dunes of a former barrier beach.⁽²⁵⁾

Cerro de Ortega—Tecomán: about six miles inland; now being cleared for field crops and orchards; in 1950 the area was covered with thorny scrub vegetation.⁽²⁶⁾

Tecomán Beach: two small plantings five miles northwest of the Boca de Apiza.

Boca de Apiza: there is an extensive reclamation of the coastal area; extensively planted to coconuts, but the groves reflect poor edaphic conditions. In 1950 a prospering grove was to be found in a sand and silt peninsula between the ocean and a brackish lagoon. By 1957, marine action had decimated the grove and only three palms remain.⁽²⁷⁾

Coahuayana: the coconut groves are in very poor condition. The copra that is processed comes from very small nuts with scant meat. Here, however, we find one of the most active centers of copra processing in the coast, evidently favored by a seasonally reliable *brecha* through which the copra can be moved out. Interplant-

ing, a far more efficient land-use, was noticeably absent, except for occasional banana patches. A very small sale of *tubá* was seen in town, but there are no cottage industries based on the coconut palms.

El Cerrito: the groves are extensive under *ejido* (collective) management, but badly tended and overrun with brush. In 1956, the groves showed moisture-deficiency and nuts were scanty even in five and six-year old trees. Some stands are older, perhaps 12 to 15 years in age. The *ejido* is concerned only with copra. The 1955 floods ruined some areas when unconsolidated river banks collapsed, tearing chunks out of the groves. The classical Filipino "diamond" pattern of planting, considered to be the most efficient land-use was not to be seen anywhere.

El Ticuiz: fairly extensive plantings in and around the village. According to informants, 15-year old groves yield approximately 100 nuts per tree, and are collected in May and December. Trees 60 to 75 years of age are said to be giving fruit. Local varieties were denominated *nayarit* and *ticuizeño*, the former giving a sharply ovoid nut, the latter a larger, meatier one. Small young nuts were called *coquitos*, semi-mature ones *media carne*, and those fully developed for copra, *agua suelta*. Copra is sun-dried for a week; there are very limited facilities for kiln-drying.

Punta San Juan de Lima (south side): new coconut plantings, still not producing, on stretches of sand and sandy loams some 300 yards from the beach. Coconut leaves were used everywhere for *ramadas* on the beach and for temporary beach shelters occupied by stores, restaurants, and bath-houses.

La Placita: extensive mature groves in and around the village, but very sporadic utilization. Plantings are dominant in the area around the mouth of the Río Maquilí, close to a lagoon. Groves are also to be seen along the trail from La Placita to La Ticla.

Ostula river delta: the right bank is known as Palmar.

Estampilla: a handful of palm trees.

La Mahajuita: a very small stand.

Río Motín: site of extensive stands of coconuts dating back to the sixteenth century, but devastated by floods in 1932. In 1950, ten palms remained, and only seven by 1956.⁽²⁸⁾

Arroyo de Ximapa: a small stand.

Lower Arroyo de Colola: well-drained soils and good water has started a small movement of settlers into the area.

Boca de Cachán: coconut palm stands are found on both east and west ends of the delta. Some of the groves are interplanted with maize.

Chocola: dense and compact groves.

Huahua: coconuts growing on the left bank as well as at the west end of the delta.

Tupitina to Arroyo del Bejuco and the Nexpa: extensive plantings. Connections by land and air have stimulated resettlement of areas near Boca del Tanque, Tupitina, Mexiquillo, etc. and the cultivation of coconuts. Some humid areas between the Arroyo del Morro and Boca Chica have been planted to coconuts only since 1950-51.⁽²⁹⁾

Caleta de Campos: west beach to the Lomas de Campos.

Bocas Cuatas to Arroyo de las Salinas: coconut plantations dominate the landscape, extending through Miramar to the Arroyo de los Morritos.

Tiolán: groves border the swamps in the area.

La Mahajuita—Arroyo del Carrizalito: very recent plantings.

Mexcalhuacán: "Here also was one of the earliest plantings of coconuts on the Michoacán coast, and to this day the coconuts of Mexcalhuacán are famous for their quality although there are fewer than one hundred trees in Mexcalhuacán proper."⁽³⁰⁾

Chuquiapa: west end of the shingle and sand beach.

Río Chuta: the Chuta lowlands; groves also border the river up- and down-stream.

Río Popoyuta: groves on both banks, and up-stream.

Playa Grande: extensive coconut stands from west end (La Peñas).

Río Chucuititán: coconuts are found along the west arm of the river which parallels the beach for 1,500 yards. An extensive lagoon is bordered by coconut palms.

El Habilla—Playa Azul: scattered, dense stands.

Melchor Ocampo and Zacatula: various areas of coconut plantations in the lowlands of the Balsas River are harvested regularly. Stands are from 3 to 15 years of age. Utilization is limited to the production of copra.

Evaluation of Filipino Influences. The Filipinos who settled in southwest Mexico and introduced *tubá* and, possibly, other aspects of utilization of the coconut palm, were probably natives of the coconut-producing Philippine regions. Shipbuilding was located in areas with well developed coconut groves. Since the crews for the galleons were recruited from laborers serving the shipyards, the sailors who jumped boat in Acapulco were assuredly men very conversant with the uses of the coconut palm. What, one might ask, was the magnitude of their influence in, say Colima, Michoacán, Jalisco, and Guerrero as regards the use of coconuts other than the extraction of *tubá*? Is there any verifiable correspondence between the utilization of the coconut in southeast Asia and its utilization in the Pacific coastlands of Mexico? Such a correspondence would not, of course, argue conclusively to Filipino influence, since minor uses for the palm could have been developed independently by the Mexican native. An inquiry into the pattern of utilization in southwest Mexico brings out some striking facts:

1. Even in areas of southwest Mexico with fairly extensive coconut plantations there was apparently little involvement

with the palm in the culture of the villagers. Most of those questioned thought one coconut was like every other coconut and knew no differences in kernel characteristics, yields, uses, and values. In contrast, close and familiar contact of southeast Asiatics with the coconut palm has created in them a consciousness of differences between varieties and qualities. The native in coconut-producing areas will distinguish many varieties: those heavy in oil, a palm low in stature, which can be harvested from ground level, dwarf nuts used for ornamental objects, freak sterile nuts, nuts with soft endosperm and excellent for copra, sweet-husked nuts, decorative palamcotta, very fibrous nuts, hard-shelled nuts, the almost black nuts, and pale-brown nuts. The southwest Mexican native apparently knows only elementary differences ascribed to regions, such as *veracruzán*, *michoacán*, *nayarit*, *tucizeño*, and the *mexcalhuacán* as the largest, sweetest, with the most liquor.

2. Food uses were known in a small part, such as the use of stem-tips and buds for salads, coconut milk for soups and porridges, shredded coconut meat for garnishing. Not even once, from Manzanillo to Melchor Ocampo, did the writer see the coconut actually used as a food or component of the diet.

3. The sterile, non-viable freak nut ("macapuno"), considered and prized as a delicacy in the Philippines, was unknown in the western Mexican coastlands. Market vendors had never heard of it.

4. The processing and utilization of coir fiber was unknown in the copra producing areas of southwest Mexico; husks, as far as the writer could see, were allowed to stand and rot, but in some cases were used for fuel or as re-enforcement for pole-and-mud walls.

5. No actual (or traditional) use of the coconut for folk medicine was noted.

6. Thatching with coconut fronds was used in temporary sheds; the petioles were often seen in use as fencing material.

7. There was no known instance in the coastlands of Mexico of a household craft or local industry based on raw materials from the coconut palm. Retail stores and notion counters carried no dolls, gewgaws, utensils, containers, combs, etc. made out of the husks and the hard shell of the nut.

NOTES

1. William H. Brown, Useful Plants of the Philippines, Technical Bulletin 10, (Ballarat and Melbourne, 1950) I, 207-339.
2. Juan de la Isla, Relacion de las Islas del Poniente y del camino que a ella se hizo desde la N.a. Espana, Colección de documentos inéditos relativos al descubrimiento, conquista, y organización de las antiguas posesiones españolas de Ultramar, 2.a serie, tomo 3 (II. de las Isla Filipinas), (Madrid, 1887), 226-243.
3. Paul C. Standley, Trees and Shrubs of Mexico, Contributions from the United States National Herbarium, Vol. XXIII (Washington, 1920-26), 70. Some representatives of the *Sabal* and *Attalea* were introduced to the Philippines after 1905. (Brown, *op. cit.*, I, 212)
4. A. de Candolle, L'Origine des Plantes Cultivées, (Paris, 1883); O. F. Cook, The Origin and Distribution of the Coconut Palm in America, Contributions from the United States National Herbarium, VII, 2 (Washington, 1901), 257-293; *id.*, History of the Coconut Palm in America, *ibid.*, XIV (Washington, 1910), 271-342.
5. Henry J. Bruman, A Further Note on Coconuts in Colima, Hispanic American Historical Review, Vol. XXVII, No. 3 (Durham, 1947), 572-573.
6. Relación de Tancitaro (Arimao y Tepalcatepec), Edición y Notas por Ignacio Bernal, Tlalocan, III, 3 (Mexico, 1952), 212, 217-218.
7. Henry J. Bruman, Some Observations on the Early History of the Coconut in the New World, Acta Americana, Vol. II, No. 3 (Washington, 1944), 220-243. Bruman conjectures that by 1587, "a modest industry engaged in making drinking vessels out of coconut shells for export to Spain was already in existence in Colima" (228).
8. F. Jagor, Reisen in den Philippinen, (Berlin, 1873) 34.
9. Cook, Origin and Distribution, *op. cit.*, 287.
10. Unless one were familiar with the technique, it does appear as though the sap were flowing from the branches.
11. The technique of extraction is essentially the same in each case: inflorescences are bruised for several weeks to stimulate sap-flow. Sap is gathered often for as long as two months. Yields

- are of the order of 2-20 quarts a day, depending on many factors.
12. Estévan Rodríguez, Relación muy circunstanciada de la navegación que hizo el Armada de S.M. a cargo del General Miguel López de Legazpi, Colección de documentos inéditos . . . Ultramar, *op. cit.*, (II de las Islas Filipinas), 373-427.
 13. Alfonso de Arellano, Relación muy singular y circunstanciada hecha por . . . capitán del patax San Lucas del Armada de General Miguel López de Legazpi, *ibid.* 1-76, esp. 31-32.
 14. *Ibid.*, 110-111.
 15. Miguel de Loarca, Relación de las Yslas Filipinas, Arévalo (June, 1582), BR, V, 169.
 16. Pedro Chirino, S. I. Relación de las Islas Filipinas, i de lo que en ellas antrabaído los padres de la Compañía de Jesus, (Rome, 1604) ap. BR, XIII, 189.
 17. Hernando de Los Ríos y Coronel, Reforms, BR, XVIII, 283.
 18. Mathieu de Fossey, Le Mexique (Paris, 1857), 404.
 19. Henry J. Bruman, Early Coconut Culture in Western Mexico, Hispanic American Historical Review, Vol. XXV (Durham, 1945), 212-223.
 20. In many areas of the Philippines *tubá* is presumed to have curative properties, especially for tubercular individuals.
 21. Ordinance of 1671, in Bruman, Early Coconut Culture, *op. cit.*, 221-223.
 22. Captain Sebastián de Pineda, Relación hecha por . . . en cosas tocantes a las yslas filipinas así de fabricar de galeones y pataches y galeras y otros pertrechos como de cosas tocantes a la guarda y conservación de las dichas yslas, Mexico, 1619, BR, XVIII, 184-185.
 23. Donald D. Brand, Coastal Study of Southwestern Mexico, II, The University of Texas (Austin, Texas, 1958), 114.
 24. *Ibid.*, 11.
 25. *Ibid.*, 110.
 26. *Ibid.*, 109.
 27. *Ibid.*, 3.
 28. *Ibid.*, 45.
 29. *Ibid.*, 75, 76.
 30. *Ibid.*, 90.

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