SIMAROUBACEAE

Shrubs or trees with bitter bark, leaves and wood; leaves alternate or rarely opposite, pinnate, rarely 1-3-foliolate or simple; inflorescence usually axillary, paniculate or racemose, sometimes spicate or of single flowers; flowers unisexual or polygamodioecious, sometimes perfect; calyx with 3-5 lobes or segments; petals 3-5 or rarely none; stamens on the base of the disk, 3-5 or many; fruits samaroid, drupaceous or capsular.

A small pantropical family with about 30 genera, 6 in Central America.

(Alvaradoa amorphoides Liebm. This curious and often abundant tree of the dry forests or thickets is called **plumajillo** or **cola de ardilla**, sometimes **palo de sobo** or **zorra**. The mature pistillate inflorescences do resemble a feather or the tail of a squirrel. — The genus Alvaradoa is named for Pedro de Alvarado who accompanied Hernando Cortes in the conquest of Mexico in 1519. Alvarado later was sent by Cortes to seize Guatemala, which he did in 1524 now more than 450 years ago. He became governor of Guatemala and later Honduras.)

Picramnia antidesma Sw. Prodr. Veg. Ind. Occ. 27. 1788.

Quina, cáscara de Honduras, in commerce.

Native from southern Mexico to Honduras. The leaves and bark are exceedingly bitter and have been used medicinally both here and abroad. It is probable that the bark of other species has been used in home remedies or even to adulterate the cáscara de Honduras barks.

Quassia amara L. Sp. Pl. ed. 2. 553. 1762.
Hombre grande, guavo, bitter wood, Surinam quassia.

Native from southern Mexico to South America. This species is one source of "bitter wood" from which quassin is extracted. The wood, or an extract from it, has had several curious uses in addition to its use in the preparation of insecticides and certain proprietary medicines. It is said to have been used in local medicine to treat fevers, perhaps because an infusion is intensely bitter. Many bitter plants are reported to be febrifuges since quinine, a well-known febrifuge is bitter. Boxes

made from the wood and used to store clothing are said to protect the clothing from moths. Beers and ales are said to have been brewed with bitter wood in place of hops. Pittier writes, in Plantas usuales de Costa Rica, 104. 1908. that ". . . es uno de los principales remedios de los Indios. Estos dividen el tronco en trozos de 30-60 cm., uno de los que siempre llevan en sus viajes. . . Contra las calenturas y como aperitivo se toma la infusión de la raspadura de estos trozos."

Simaba cedron Planch. in Hook. Journ. Bot. 5: 566. 1846.

Cedrón.

Native from Costa Rica to northern South America and cultivated in Costa Rica, El Salvador and perhaps Guatemala. The seeds, sometimes seen in markets have a reputation as a remedy for snake bite. Since all parts of the plant are bitter it has a reputation as a febrifuge.

Simarouba glauca DC. Ann. Mus. Paris 17: 424. 1811.

Aceituno, negrito, juco mico, jocote de mico, zapatero.

Native from Florida, southern Mexico and Cuba through Central America to Panama. The mature fruits resemble ripe olives, hence the usual common name. The tree often is quite abundant in dry regions of 900 meters or less and is conspicuous for the attractive dark green foliage. The ripe fruits are reported from many sources to be edible but those that I have tried were either bitter or insipid. An oil has been extracted from the seeds and used as a cooking oil or for soap making. H. de Sola e Hijos of El Salvador did considerable research on the plant as a possible commercial source of cooking oil and an acceptable oil was produced. Securing sufficient fruits for a commercial operation was a problem since the trees are dioecious (or polygamodioecious) and the establishment of plantations costly. The bitter principle is apparently a glucoside called glaucarubin or simaroubidin found in the seeds and in the press cake. Both bitter and non-bitter seeds occur and both contain the glucoside in about equal amounts. For additional information see: Francisco de Sola in Ceiba 4: 351-358. 1956; Robert Armour in Econ. Bot. 13: 41-66, illus. 1959.

SOLANACEAE

Herbs, shrubs, vines or trees, often armed with prickles, often with simple or variously branched hairs; leaves opposite, simple to deeply lobate or pinnatisect; inflorescences racemose, cymose, fasciculate or reduced to a single flower, lateral or terminal; flowers perfect, regular or somewhat irregular, normally 5-lobate; calyx campanulate or tubular, 4-6-lobate, usually 5-lobed; corolla sympetalous, from tubular or urceolate to subrotate; stamens 2-5, usually 5, epipetalous and opposite the sini; ovary superior, 3-5 locular; fruit a capsule or a berry.

A large cosmopolitan family but most abundant in the neotropics. There are about 85 genera with about 30 genera in Central America and of these about a dozen have some economic importance.

Acnistus arborescens (L.) Schlecht. Linnaea 7: 67. 1832.

Güitite, palo de gallina.

The berries are edible and sometimes made into preserves. I found them to be insipid. The small trees are easily grown from cuttings and are useful host trees for orchid collections and for other epiphytes.

CAPSICUM. The condiment peppers are America's greatest contribution to the world of spices. These spices add a "Latin flavor" to a great many dishes prepared from Mexico and the West Indies southward. How many "botanical kinds" of these condiment peppers there are is open to a bit of mild controversy. Do the sweet and the bell peppers belong in the same botanical species as do the condiment peppers? Probably. The botanical names used for the cultivated or the spontaneous condiment peppers are in an almost unbelievable tangle. The common names for these peppers which were certainly used as spice by the indigenous people centuries before the days of discovery and conquest, is just as involved as are the botanical names. Perhaps more so! The varieties of hot peppers known to the Mexicans and to the Central Americans is truly a multitude. The kinds (should I say forms) of hot peppers in markets in adjacent villages may be the same but their common names not necessarily so. The same common names

may designate different appearing peppers and there are hundreds, maybe thousands, of common names in the endless number of languages and dialects from Mexico southward. The sweet peppers (and they are sometimes hot) are derived, I believe, from the same kinds as are the condiment peppers, and they are used either as condiments or by themselves as vegetables.

The capsicums were treated by L. H. Bailey, the grand old man of the systematics of cultivated plants, in his Manual of Cultivated Plants (1948 printing) as one species. Capsicum frutescens L., to which were added five horticultural varieties. After thirty years of thinking about the useful plants in Central America I know of no better system for them, except that I believe that it is necessary to use the name Capsicum annuum L. for the basic species.

I have seen what might be considered to be native plants of hot peppers, all called chiles everywhere in Central America. Most of them, and perhaps all of them are escapes or perhaps naturalized plants from many centuries of use by man.

The bell or sweet peppers are widely grown in Central America but more of them are grown in the temperate zones. I have never seen any of these peppers spontaneous or naturalized. The fruits are large and puffy with a depression at the base and are often furrowed on the sides, bell-shaped to apple-shaped, red or yellow when mature. Doubtless cultigens.

The hot peppers and the bell peppers all have basically white flowers. The only other pepper used in Central America is Capsicum pubescens R. & P., probably native of Peru. I saw it first in Central America in 1948 or 1949. It is not mentioned by Pittier in his Plantas Usuales de Costa Rica (1908) nor by Standley & Calderón in their Lista Preliminar de las Plantas de El Salvador (1925). The plant has purple flowers, and the hottest flesh of all capsicums.

Certain nutrients, especially the vitamins, found in the peppers are exceedingly abundant and these peppers probably have had much to do with the well-being of tropical American peoples often on a limited diet of tortillas and beans. The many ways that peppers are used in cookery are as numerous as the

cooks that prepare them. One medium sized raw red pepper is reported to contain 2670 international units of Vitamin A, 0.5 milligrams of thiamin, 0.5 milligrams of riboflavin, 0.3 milligrams of niacin and 122.0 milligrams of ascorbic acid. One tablespoon of dry and ground hot, red pepper without the seed is reported to contain 11,520 international units of vitamin A, 0.3 milligrams of thiamin, 0.20 milligrams of riboflavin, 1.6 milligrams of niacin but only 2 milligrams of ascorbic acid. (Food, Yearbook of Agriculture, 1959, page 251).

Capsicum annuum L. Sp. Pl. 188. 1753. C. frutescens L. Sp. Pl. 189. 1753. C. minimum Miller, Gard. Dict. ed. 8. 1768.

Chile, chiltepe, chilpepe, chilpete, chiltepín, aji, chile de zope, chile dulce, chile de relleno, chile verde, pimienta dulce, chile pimienta, chile picante, chile pepino, chile cobanero, chile fuerte, chile chocolate, chile ciruela, chile jalapeño, jalapeño, chile guaque, chile pacaya, chile diente de perro, red pepper, chile pepper, sweet pepper, Cayenne pepper, bird pepper, and doubtless many more common names.

Native of America, used and/or domesticated for use by early man. I have seen none in Central America that I thought were native without doubt. There are many common names, besides those given above, often with an ajective to modify the word chile. — I use C. annuum as the basic name for all hot and sweet peppers (except C. pubescens) since I believe them all to be derived from one "kind." Linnaeus says of C. annuum "Habitat in America meridionali." while C. frutescens he gives as "Habitat in India." Alefeld in his Landwithschaftliche Flora (1866) combined C. annuum and C. frutescens, the second as a synonym. When these two names are combined then Alefeld's lead must be followed. The following varietal names may be used if needed: Capsicum annuum L. var. annuum may be used for the small-fruited very hot bird peppers, either annuals or becoming fruticose perennials, the fruits to 1 cm. in diameter and nearly round up to 4-5 cm. long and about 1 cm. in diameter. These are the kinds that are commonly naturalized or spontaneous at low and middle elevations; Capsicum annuum var. cerasiforme Irish for the cherry peppers with red or yellow, erect or nodding oblate fruits 1-3 cm. in diameter; Capsicum annuum var. conoides (Miller) Irish with erect, red or yellow oblong cylindrical fruits about 2 cm. long; Capsicum annuum

var. grossum (L.) Sendt. for the sweet peppers which are usually used when the fruits are green, but maturing red or yellow, the fruits are puffy, usually oblate, ridged, depressed at the base to 10 cm. or even larger; Capsicum annuum var. longum (DC.) Sendt., the long hot peppers with yellow to red fruits up to 30 cm. long.

Capsicum pubescens Ruiz & Pavón, Fl. Peruv. 2: 30. 1799.

Chile japonés, siete caldos, chile Jutiapa.

I have seen fruits of this species in markets in Guatemala and Costa Rica and have grown it in my garden in Honduras. The most beautiful of all the Capsicum fruits, but the thin flesh is exceeding ly hot and acrid. See above.

Cyphomandra betacea (Cav.) Sendt. Flora 28: 172. 1845.

Tomate, tomate cimarrón, tomate extranjero, tomate de árbol, granadilla.

Native of South America and grown at middle elevations in Central America. It is not common but is occasionally seen in markets. The fruits are used in the same manner as tomatoes but are somewhat more acid.

Datura candida (pers.) Safford, Journ. Wash. Acad. Sci. 11: 182. 1921.

Campana, floripondio, borrachero.

A tree with large, white pendulous flowers to 30 cm. long. Introduced from Peru as an ornamental. Contains halucenogenic alkaloids and so used by Amazonian Indians, perhaps occasionally used in Central America for the same purpose.

Datura stramonium L. Sp. Pl. 179. 1753.

Tapa, tapate, hoja de tapa, vuélvate loco, estramonio, Jimson weed.

Widely distributed as a weed in Central America and tropical regions, probably native in America. Used as a domestic medicine in Central America and some seeds formerly gathered for export. The seeds contain an alkaloid which may cause

death if they are eaten. The plant is the source of the drug stramonium, used as an analgesic and antispasmodic.

Jaltomata procumbens (Cav.) J. L. Gentry, Phytologia 27: 287. 1973. Saracha procumbens (Cav.) Ruiz & Pavon, Fl. Peruv. 2: 43. 1799.

Jaltomate, hierba de mora, cinco negritos, madre quilete, belladona cimarrona.

The leaves are used as a pot herb, an infusion of the leaves as a stomach remedy.

Lycopersicon esculentum Miller, Gard. Dict. ed. 8.1768.

Tomate, tomato, many variations of tomate usually with the addition of a descriptive adjective. Names in most indigenous languages of Central America.

Possibly native of Ecuador and Peru where the ancestral form may have been confined. Carried to Mexico by early man where it became an important cultigen. The good cultivated forms presumed to have been spread to all of pre-Columbian America where it would grow, certainly for centuries before time of discovery. Carried by the Spanish conquistadores to southern Europe, eventually it spread to northern Europe and to eastern North America where the fruits were thought to be poisonous. — I have often wondered what the Italians used to flavor their pastas before the introduction of tomatoes.

Tomatoes are found in all markets in season and often are sold one tomato at a time since they can be expensive. Grown in most localities except the wettest and the highest. Tomatoes, like peppers, are prepared in as many ways as there are cooks, and without these two solanaceous fruits food, and life, would be less interesting.

Lycopersicon esculentum var. cerasiforme (Dunal) Gray, Syn. Fl. 2, pt. 1: 226. 1886.

Tomatillo, mil tomate, cherry tomato.

Native in tropical America. I have seen it in many places in Central America as a tolerated weed but certainly never as an

indigenous plant. Doubtless planted occasionally. The small fruits, 1-3 cm. in diameter, are found in many markets in season probably most from spontaneous plants. The fruits are usually a bit more acid than those of the usual cultivated tomato but are used for the same purposes.

Nicotiana tabacum L. Sp. Pl. 180. 1753.

Tabaco, tobacco.

Native of tropical America but not now known from wild plants. The plants are often spontaneous but usually do not persist. Tobacco is now grown in all Central American countries in many horticultural varieties. It is an important cash crop and perhaps most of our production is used within the region. The tobacco grown at Copán (Honduras) during colonial time was considered to be one of the finest tobaccos of the Spanish world and was widely exported. When I first knew the tobacco of the Copán region in the 1940's it was certainly a very poor tobacco of horrible flavor and odor. Either the tobacco was better in colonial times or in the 1940's the consumers taste had changed for these Copán tobaccos had little demand except locally and nothing to recommend them!

The tobaccos of Copán and of all Central America have improved with the introduction of good cultivars in recent years. The principal use of the Central American tobaccos is for the production of cigarettes, as are most tobaccos of the world. Some quite acceptable tobaccos for the production of cigars is grown.

The use of tobacco by the early American people was mostly as a ceremonial product in their religious rites. The Indians use of tobacco was noted by Columbus. The plant was introduced into Europe in 1556 and grown as a ornamental and for its medicinal value. The custom of smoking tobacco was opposed in Europe and nearly taxed out of existence,- however it soon spread to most of the world.

Tobacco contains an alkaloid, nicotine, and to this is due the soothing and narcotic effects of smoking it. The use of tobacco is addictive and is said to be the principal cause of cancer in the respiratory tracts of man.

Petunia hybrida Hort. ex Vilm. Fl. Pl. Terre, ed. I. 615. Petunia, betulia.

A cultigen and thought to be a hybrid of P. axillaris BSP. and P. violacea Lindl. The plant is easy to grow and many attractive horticultural varieties are to be seen in Central America. Hybrid petunia seeds are grown in Costa Rica. The United States in 1958 imported about 51.5 kilograms of Costa Rican petunia seed valued at $ 91,000, at that time literally worth more than it weight in gold!

PHYSALIS. The Miltomates are a large group of plants common in Central America, perhaps with 25-30 kinds. How many of these are used in the flavorful sauces of Central American cooks I am not sure. I have collected the few kinds that follow when they were offered in markets.

Physalis angulata L. Sp. Pl. 183. 1753.
Miltomate, vejiga de perro, chimbombo.

The species is widely distributed but rarely used as a component of the hot sauces. I have a record of its use in Costa Rica.

Physalis cordata Miller, Gard. Dict. ed. 8. 1768.
Miltomate.

Native or as a weed from Mexico and the West Indies to Panama. The fruits are used rarely in sauces.

Physalis philadephica Lam. Encl. Method. Bot. 2: 101. 1786.

Miltomate, tomatillo, miltomate Santo Tomás, huevito.

Native or introduced from Mexico and the West Indies to Panama. Perhaps the most commonly used of the fruits of Physalis in sauces or used like tomatoes. The species has been cultivated in Guatemala and perhaps elsewhere for its relatively large fruits.

Physalis pubescens L. Sp. Pl. 183. 1753.

Tomatillo, miltomate, huevito, huevo, huevo de tortuga, miltomate criollo, ground cherry.

Pantropical, often as a weed in fields. The fruits are used in hot sauces and in cookery through Central America but most abundant in Guatemala.

Saracha, see Jaltomata.

Solandra grandiflora Sw. Vet. Akad.-Handl. Stock. 8: 300, t. 11. 1787.
"Copa de oro."

Native from southern Mexico and the West Indies through Central America to Panama. A large vine with attractive bat pollinated flowers up to 25 cm. long. Often cultivated.

SOLANUM. A large genus of some 1,500 species with perhaps 100 of these in Central America. Most species of Solanum are unattractive, spiny shrubs or vines. The genus is important for the potatoes that help to feed the world and for a half dozen or so species that produce edible fruits.

Solanum americanum Miller, Gard. Dict. ed. 8. 1768. S. nigrum of authors, probably not Linnaeus.

Mora, hierba mora, yerbamora, quilete, macuy, macuí, black nightshade.

Mexico and the West Indies through Central America to South America. Widespread as a weed. The foliage is used as a pot herb and I have seen it offered in markets in El Salvador and Guatemala. The fruits are said to be eaten but I have not seen them offered nor have I eaten the fruits. Both the foliage and the fruits have a reputation of being poisonous.

Solanum mammosum L. Sp. Pl. 187. 1753.
Chichita, chiche, berenjena, cantú, chichimora, pichichío.

Mexico and the West Indies through Central America to South America. A quite visible plant for its bright yellow fruits used as decorations by the Indians going on a pilgrimage to the santuary of the Black Christ in Esquipulas, Guatemala. The pilgrims, from as far away as Mexico and Costa Rica, came by foot to Esquipulas and during the time that the pilgrimage was made there were more and more pilgrims as one approached Esqui-

pulas. The straw hats of pilgrims, on their way home, were decorated with the bright yellow fruits of this Solanum. It was a sign saying "I have been there!" In 1976 both pilgrims and buses bore plastic decorations, probably made in Japan.

The fruits have the reputation of being poisonous.

Solanum melongena L. Sp. Pl. 186. 1753.
Berenjena, eggplant.

Native of India and now grown in temperate and tropical regions around the world for their edible fruits. Commonly found in Central American markets but not much appreciated. The plants are somewhat difficult to grow in our region, being subject to mildew. The dark purple fruits are used as a vegetable, as in the rest of the world. The name Solanum melongena var. esculentum (Dunal) Nees is sometimes used.

Solanum muricatum Aiton, Hort. Kew. 1: 250. 1789.

Pepino, pepino de fruta (to distinguish it from cucumbers), pepino mango, melon pear.

Possibly originated in the Andean region but now known only in cultivation. Found in all Central American markets in season. Grown at middle elevations. The immature fruits may be cooked and used as a vegetable, when ripe they are usually used as a fruit, eaten out of hand or in salads. The ripe fruits are sweet and juicy.

(Solanum quitoense Lam. Naranjillo, naranjilla, lulo. An Ecuadoran species in which the juice of the nutritionally rich fruits has been used to fortify juices less valuable in the diet but more acceptable. We grew the plant in Honduras without much success.)

(Solanum topiro HBK. ex Dunnal. Cocona. An Andean species with large fruits, used as a source for juice or to fortify other less rich fruit juices. We grew the plant in Honduras. It did well but the fruits were so sour as to be of almost no value.)

Solanum tuberosum L. Sp. Pl. 185. 1753.
(La) papa, papa polima, patata, papa extranjera, papa blanca, papa morada, papa estrella, potato.

Native in the temperate Andes and although an important food plant in the Andes for centuries past it is probable that it was not known in Central America or Mexico until introduced by the Spaniard after the time of the conquest. Potatoes are grown in Guatemala, Honduras, Nicaragua and Costa Rica, mostly about 1,000 meters elevation. Most potatoes are small in size, rarely more than 4 cm. long except in Costa Rica. Nowhere is the crop of great importance. Potatoes are a major crop in cool temperate regions of the world.

STERCULIACEAE

Herbs, shrubs or trees commonly with stellate hairs, these often mixed with simple hairs; leaves alternate, simple, entire or dentate or lobate sometimes digitately compounded; stipules usually present and deciduous; inflorescence racemose, cymose-paniculate or reduced to a single flower; calyx usually persistent, with 5 valvate or imbricated lobes; petals 5, hypogynous, sometimes none; stamens usually united into a tubular column which is divided at the apex into 5 lobes or teeth alternate with the petals; ovary superior, usually with 4-5 loculeS or carpels; fruit dry, the carpels sometimes united to form a capsule; seeds not lanate.

Genera about 50, 12 in Central America. The family is related to the Malvaceae and Bombacaceae. Although some of the very large trees of tropical America belong in the family the wood is usually of poor quality.

Basiloxylon excelsum Standl. & L. Wms. Ceiba 3: 30, t. 1952.

Castaño, chicote.

A curious tree. The genus recently discovered in Central America in Costa Rica and possibly the same species in Guatemala. In Guatemala the seeds are said to be eaten by both man and animals. Other species of the genus are in South America.

Chiranthodendron pentadactylon Larreategui, Descr. Chiranthod. 17. 1805.

Mano de león, mano de mico, árbol de las manitas, hand flower.

Native and planted in Mexico and Guatemala, known from Sta. Bárbara mountain in Honduras. Probably a tree of some religious significance in Guatemala. The androecium is red and "hand-shaped" with outstreched fingers or claws. The tree was once a forest inhabitant in the Guatemalan highlands but as the forest has been cut down the "hand trees" were left and are seen in pastures or farm land where the tree does not seem to reseed easily. The seeds are large and heavy and do not disperse far from the tree. Occasionally cultivated. The leaves formerly seen in Guatemalan markets and used to wrap food.

(Cola nitida (Vent.) A. Chev. The tree is the source of kola nuts. Native of Africa where it has been known as a masticatory. The seeds contain about 2o/o of caffeine and a glucoside, kolanin, which act as a heart stimulant. The tree has been grown in El Salvador and Honduras but not commercially. The cola nut provides one ingredient for several of the "cola" beverages.)

Guazuma ulmifolia Lam. Encycl. 3: 52. 1789.

Guácimo, guácimo blanco, cualote, tapaculo, caca de mico.

Mexico and the West Indies through Central America to South America. Common in Central America where the trees are often left when clearing pastures, perhaps to provide shade and food for the cattle. The fruits are hard but said to be sweet and appreciated by cattle. Charcoal made from the tree was used in colonial times for the manufacture of gun powder. No religious significance has been attached to the tree so far as I know. Tests have been made substituting the fruits for corn in feed for chickens. Results seem to have been satisfactory.

Helicteres mexicana HBK. Nov. Gen. & Sp. 5: 305. 1821.

Quesillo, capulín, barreno, barrenillo, tornillo.

Native or naturalized from Mexico through Central America up to about 800 meters. The bark of this shrub, as in related plants, contains a tough fiber useful in making rough cordage.

Herrania purpurea (Pittier) R. E. Schultes, Caldesia 2: 333. 1944.

Cacao de monte, cacao de mico, cacao de ardilla.

Native of lowland Atlantic forest of Costa Rica. The seeds are toasted and used by the Indians to prepare a bitter drink. The fruits, with irritant hairs that fall away with age, contain many seeds the size of a grain of maize.

Sterculia apetala (Jacq.) Karst. Fl. Colomb. 2: 35. 1869.

Castaño, castaña (the seeds), bellota, palo panamá.

Native or spread by man at low elevations, from Mexico and the West Indies to northern South America. The tree is called panamá in Panama and perhaps the name of the country is taken from that of the tree. The peanut-sized seeds are edible and when roasted and ground a beverage is made from them.

THEOBROMA. The genus in Central America consists of six species of which all have seeds that are used to produce cocoa or chocolate. Cacao is usually used to mean the trees while cocoa is the seed from the fruit and the beverage made from the roasted and ground seed. The beverage is often called coco by many people, in confusion with cocoa. The fruit from the coconut palm is often written cocoanut in error.

Theobroma angustifolia DC. Prodr. 1: 484. 1824.

Cacao de Costa Rica, cacao de mico, cacao silvestre, cacao cimarrón.

Occurs from the wet lowlands of Mexico through Central America and perhaps native there but chiefly in cultivation. Doubtless spread by early man over this region. The fruit is to 15 cm. long and brownish tomentose. The seeds are thought to produce some of the finest cocoa much sought after in Europe. The pulp of the fruit is edible.

Theobroma bicolor Humb. & Bonpl. Pl. Aequin. 1: 104, t. 30. 1808.

Pataste, pataxte, pataste, cacao pataste.

Thought to be native from Tabasco in Mexico and perhaps in Guatemala. Cultivated from Mexico to Colombia, the native area uncertain. The cocoa from this species is of poor quality. I have seen the fruits in several highland markets, brought from the lowlands and sold for the rather insipid pulp in the fruits.

Theobroma cacao L. Sp. Pl. 782. 1753.

Cacao real.

Cacao, usually for the trees or the crop; cocoa, the seeds from which chocolate or cocoa is made and (correctly) for the beverage; cacao criollo; many indigenous names.

Probably native in the lowlands of tropical North America but in cultivation for so long that wild trees, if they exist, can not be distinguished. Costa Rica is the principal producing country in Central America, followed by Guatemala. Mexico is the largest producer on the continent. Most cocoa now comes from Africa (Ghana) and southeast Asia.

Cacao is one of the most unusual of the beverage plants since the chocolate or cocoa produced from the seeds is also a very good food. Bitter chocolate, the first product in the processing of the seeds, is made into sweet chocolate by the addition of sugar and spices. Milk chocolate is made by the addition of milk, as well as sugar and spices. Cocoa is made by removing about 60o/o of the fat, or cocoa butter, and making a powder from the residue. The seeds were used as a medium of exchange from ancient times to perhaps a century ago in Mexico and Guatemala and possibly in all Central America. I was offered seeds in a Guatemalan market, as change, as recently as thirty years ago. An interesting account of cacao by Standley is in the Flora of Guatemala (Fieldiana, Bot. 24, pt. 6: 423-426. 1949).

Theobroma leiocarpum Bernoulli, Neue Denkschr. Allg. Schweiz. Gesell. 24: 6. 1871.

Cacao, cacao calabasillo.

Known only from cultivation and possibly mixed in cacao plantations. Perhaps derived from T. cacao or a regressant from it.

Theobroma pentagonum Bernoulli, Neue Denkschr. Allg. Schweiz. Gesell. 24: 6. 1871.

Cacao lagarto, cacao Nicaragua.

Described from Guatemala and said to be found in cacao plantations. The fruits prominently 5-angulate, the furrows verrucose-tuberculate.

Theobroma simiarum Donn.-Sm. Bot. Gaz. 25: 145. 1898.
Cacao de mico, tete negro.

Costa Rican. The seeds yield a kind of cocoa. The fruits hang from the slender trunks of the trees and resemble sausages.

STYRACACEAE

Trees or shrubs, often with stellate or lepidote pubescence; leaves opposite, estipulate, entire or rarely dentate; inflorescence of terminal or axillary racemes, often cyme-like or reduced to few-flowered fascicles; calyx gamosepalous, with 4-5 lobes or teeth; corolla 4-5 lobate, the lobes joined at the base or somewhat above; stamens usually twice as many as the corolla lobes, uniseriate, connate with the corolla; ovary superior to inferior; fruits drupaceous and indehiscent or dry and irregularly dehiscent or 3-valvate.

Eighteen genera in temperate and tropical regions of the world. Only Styrax, with four species, occurs in Central America.

Styrax argenteus Presl, Rel. Haenk. 2: 60. 1836.

Estoraque, tepeaguacate, naranjo, duraznillo, álamo, resino.

Native from Mexico through Central America and perhaps beyond. The resin obtained from the wood has been used as a substitute for storax and benzoin. It has been used as incense in Costa Rica and perhaps Guatemala. The bark is said to have been used as a fish poison. The storax or styrax of commerce comes from a species of Liquidambar, not from Styrax.

TAXODIACEAE

Large trees; leaves needle-like; flowers unisexual, small; the staminate flowers in slender drooping panicles, with 6-8 stamens; pistillate flowers solitary or paired near the ends of branches of the previous year, subglobose, of imbricated scales

each bearing 2 ovules near the base; the fruit a short-stalked, globose or ovoid cone 1.5-2.5 cm. long.

The description above limited to the genus Taxodium. The family consists of some ten genera, only 3 in America, Taxodium, Sequoia and Sequoiadendron. Some of the most massive trees known belong here.

Taxodium mucronatum Tenore, Ann. Sci. Nat. III. 19: 355. 1853.
Sabino, ahuehuete.

Native and occasionally cultivated from central Mexico to Guatemala. Some exceedingly large trees occur in Mexico. El arbol del Tule at El Tule just outside of Oaxaca is 40 meters tall with a perimeter of 42 meters, the volume 705 cubic meters and the approximate weight 540,000 kg. A new label (1979) gives the approximate age as 2,000 years but the label ten years ago gave the approximate age as 4,000 years. The famous trees in this grove are slowly dying as the climate of the Oaxaca valley continues to become drier. Most trees that I have seen in Mexico and Guatemala occur along streams. The wood is sometimes used since it takes a fine polish and is resistant to decay and insect attack. I have seen no very large trees in Guatemala.

THEACEAE

Trees or shrubs with alternate mostly persistent, simple, entire or serrate leaves; flowers usually perfect, small or large, usually solitary; sepals 5-7 or rarely none; petals 4-5 or more, distinct or connate at the base; stamens numerous, rarely 5-15; ovary superior or rarely inferior; fruit a capsule (in ours).

A family with about 20 genera and many attractive plants. Six genera are native and one introduced into Central America.

Camellia japonica L. Sp. Pl. 698. 1753.
Camelia.

Native of China and Japan, widely planted at middle and higher elevations in Central America as an attractive and fragrant ornamental. Flowers often sold in the markets.

Camellia sinensis (L.) Kuntze, Act. Hort. Petrop. 10: 195. 1887.

Té, tea.

Native of China or India, widely cultivated in southeast Asia for the tea leaves, the most used stimulating beverage of the world. Tea has been cultivated in Central America and plantations of some size were once planted near Cobán, Guatemala. The plants persist but little if any tea is picked now, possibly due to relatively expensive labor.

THEOPHRASTACEAE

Trees or shrubs; leaves alternate, often crowded and subverticillate at the ends of the branches, simple, entire, often coriaceous and with a terminal spine or mucro; inflorescence a raceme or reduced to a single flower; flowers perfect, small, 5-parted; sepals free or slightly connate at the base; petals connate to form a tube, lobes imbricated; stamens 5, inserted toward the base of the corolla; staminodia 5; ovary superior; fruit baccate or drupaceous.

Four genera, all in tropical America, three in Central America.

Jacquinia aurantiaca Aiton, Hort. Kew. ed. 2. 2: 6. 1811.

Naranjillo, mata pescado, barbasco, espina-ruco, escorpioncillo, carambillo, crucillo, viborrano, sapo, knock-me-back.

Native from Mexico and Belize to Panama. The attractive hard-shelled fruits are macerated, sometimes also the stems, and used as a barbasco to stupify fish. The terminal spines of the leaves many cause painful wounds on the unwary.

TILIACEAE

Trees or shrubs, rarely herbs, the pubescence often of branched hairs; leaves alternate or rarely opposite, stipulates geminate or none; inflorescence cymose; flowers perfect, small to large; sepals 5, valvate or subimbricated; petals free, often sepaloid or none; stamens often many, free or connate into 5-10 fascicles; anthers 2-called, opening by slits or apical pores; ovary superior, 2-10-celled; fruits baccate or drupaceous.

A large and sometimes difficult family of about 50 genera, widely distributed but most common in the tropics. The Elaeocarpaceae is often included here. The bark in many kinds contains a strong fiber used as cordage. Many are weeds.

Apeiba tibourbou Aublet, Pl. Guian. 538, t. 213. 1775.
Peine de mico, majagua, burío, burillo.

Native from Mexico to northern South America. The tough, fibrous bark has been used to make a coarse rope. The plant often invades old fields. Easily recognized by the large fruit covered with long, stout, flexible spines. The seeds are said to contain an oil.

Belotia mexicana (DC.) Schum. in Engler & Prantl, Pflanzenf. 3, pt. 6: 28. 1890.

Mecate colorado, moho, mountain moho, sirín de paloma.

Native from Mexico to Costa Rica. The tough bark is stripped from the plant and used as cordage.

Corchorus capsularis L. Sp. Pl. 529. 1753.
Yute, jute.

Native of Asia, probably India. Possibly grown in small quantities in Central America but I have not seen it. Jute is the most used fiber crop, after cotton. Both cotton and flax produce better fiber for textiles. India and Pakistán are the large producers of this fiber.

Heliocarpus appendiculatus Turcz. Bull. Soc. Nat. Moscu 31: 226. 1858.

Mahauha, majao blanco, burio, cajetón, pestaña de mula, calagua, damajao colorado.

The tough bark fibers are sometimes used for making cordage. The bark is said to be used in clarifying syrup in the making of crude sugar.

Heliocarpus mexicanus (Turcz.) Sprague, Kew. Bull. 272. 1921.

Cajete, cajeto, cajetón, calagua, palo mozote, mozotillo, moho, broad leaf mojo.

Native from Mexico to Costa Rica. The tough fibers in the bark sometimes used for making cordage.

Luehea candida (DC.) Mart. Nov. Gen. & Sp. 1: 102. 1824.

Algodoncillo, molinillo, guácimo, guácimo molinillo, trompo.

Native from Mexico to Colombia. The name molenillo derives from the woody capsules which are fastened to a stick and then rotated to beat chocolate to a froth. The bark is used as temporary cordage.

TRIUMFETTA. There are several species in Central America and most of these have been used at one time or another for cordage. The capsules are setose or echinate and adhere to clothing and the fur and hair of animals. Most are weedy and most called mozote for the echinate fruits.

Triumfetta dumetorum Schlecht. Linnaea 11: 377. 1837.

Mozote, mozote de caballo, estrellitas.

Southern Mexico and the West Indies, Guatemala south to South America. The tough branches are sometimes used to make rough brushes or brooms. An extract from the plant is employed as a remedy for jaundice, stomach ailments and gonorrhea about Cobán, Guatemala. The burs or fruits cling tenaceously to the fur or hair of animals, especially to the tails of horses and are a nuisance.

Triumfetta lappula L. Sp. Pl. 444. 1753.

Mozote, mozote de caballo, mozote colorado, mozotillo, bur.

A weedy plant over all of our area below 2,000 meters to South America. Africa. The bark contains a strong fiber from which cordage may be made. The mucilaginous sap is used in clarifying the syrup in making crude sugar from cane.

Triumfetta semitriloba Jacq. Enum. Pl. Carib. 22. 1760.

Mozote, mozote colorado, mozote de caballo, mozotillo, escobilla amarilla.

Distributed from Mexico to South America, often as a weed.

The mucilage of the leaves and bark is used in clarifying the syrup in the making of crude sugar. An infusion is employed in Costa Rica as a remedy for colds.

Triumfetta speciosa Seem. Bot. Voy. Herald 86. 1853.
Mozote, cáñamo.

Southern Mexico to Panama, mostly at about 1,500 meters. Like most other species the stem is said to produce a strong fiber. When in flower the plants are attractive but the spiny fruits are as objectionable as those of other species.

TROPAEOLACEAE

Herbs, sometimes with tuberous roots, often twining, glabrous or nearly so; leaves alternate, usually long petiolate and peltate, angulate or palmate-lobate; inflorescence axillary and 1-flowered, rarely several-flowered; flowers perfect, irregular, produced posteriorly into a spur; sepals 5, connate at the base; petals 5 or rarely fewer, the upper two exterior and distinct from the others; ovary superior, 3-lobed; the fruit a 3-seeded schizocarp.

One genus with perhaps 50 species distributed from Mexico to Chile and Argentina.

Tropaeolum majus L. Sp. Pl. 345. 1753.
Mastuerzo, capuchina, nasturtium.

Native of the Andes. Cultivated in many places in Central America as an ornamental.

Tropaeolum tuberosum Ruiz & Pavón, Fl. Peruv. 3:77, t. 314.

Añu in Peru, papa extranjera in Mexico.

A Peruvian species introduced into Mexico (Citlaltepec volcano) and once grown in Turrialba in an experiment in feeding hogs. It is curious that the plant did not get introduced in pre-Columbian times to the Central American highlands. The plant is grown for the tuber in Mexico and in the Andes.

TYPHACEAE

Usually tall glabrous herbs growing in marshes or very wet soil, with creeping rootstocks and simple erect stems; leaves mostly linear, entire, parellel-veined; flowers unisexual and crowded into compact cylindrical spikes, the staminate inflorescence at the apex of the spike and the pistillate below; the superior ovary when mature wind borne by the attached silky hairs of the gynophore.

One genus with about 10-15 species of wide distribution. The following known in Central America.

Typha domingensis Pers. Syn. Pl. 2: 532. 1807.
Tule, tul espadaña.

Widely distributed in the Americas. The fluffy "wool" from the flower spikes is used to fill pillows, for which purpose it is not good. The spongy leaves are used to weave mats and to make fans. The spikes before complete maturity are dried and used for decorations.

Typha latifolia L. Sp. Pl. 971. 1753.
Tut, cat-tail.

In marshes and shallow water at 1,000-2,000 meters in Central America, distributed around the world. The leaves are used to weave mats and fans, the "wool" to fill pillows and the dried spikes are used as decorations. This and the preceeding species often grow together in the same marsh, and perhaps hybridize.

ULMACEAE

Trees or shrubs; leaves alternate, entire to serrate or crenate, the stipules usually fugaceous; flowers unisexual or perfect, in cymes or racemes or the pistillate solitary in the

leaf axils; perianth 4-5 parted or of 4-5 distinct sepals; petals none; stamens as many as and opposite the perianth segments; fruits a samara, nut or drupe.

About a dozen genera in temperate and tropical regions, six in Central America.

Chaetoptelia mexicana Liebm. Nat. For. Kjoeb. Medd. 1850: 76. 1851.

Duraznillo, mezcal, membrillo.

Native from southern Mexico to Panama in montane forests. Often a large tree to 30 meters with a large clear trunk. The wood is used for cross-ties, axils and wheels for ox carts. Once common in the mountains but now becoming uncommon to rare.

Trema micrantha (L.) Blume, Mus. Bot. Lugd. Bat. 2:58. 1853.

Capulín, capulín blanco, capulín montés, capulín macho, capulín negro, capulín cimarrón, juco, vara blanca, white capulín, churrisco, white bay cedar, wild bay cedar, bastard bay cedar.

Often an abundant weedy tree of mostly dry situations to 2,000 meters from Florida and Mexico through the West Indies and Central America and most of South America. The bark contains a tough fiber that is used for cordage. The wood was used to make charcoal and from it gun powder. The supple branches are sometimes used to weave baskets.

UMBELLIFERAE

Herbs, rarely suffrutescent; leaves alternate or rarely opposite, often all radical or the radical leaves larger and more conspicuous than the cauline ones, leaf blade simple or usually compound or decompound, the petioles often dilated into a sheath at the base; inflorescence almost always umbellate, rarely capitate, the umbels simple or compound; flowers small, regular or nearly so; calyx tube adnate to the ovary, the limb 5-toothed or obsolete; petals usually 5; stamens 5; ovary inferior, 2-celled; styles 2; fruit dry, of 2 indehiscent 1-seeded mericarps.

A large family best represented in temperate regions. There are perhaps 200 genera with about 90 in North America and of these 27 genera native or introduced in Central America. The family is easily distinguished from all others by the aromatic foliage, compound leaves with sheathing petiole, the typically umbellate inflorescence, the bicarpellate bilocular inferior ovary, the fruit a shizocarp. Many economic plants belong here.

Anethum graveolens L. Sp. Pl. 263. 1753.
Eneldo, hinojo, dill.

Native of southeastern Europe, cultivated and occasionally an escape in Central America. The plants grow well at middle elevations. The foliage, either fresh or dried, is used as a spice for foods, especially pickles. An essential oil, oil of dill, is distilled from the foliage and is a good flavoring material for foods. The seeds contain an oil and are often used to flavor foods. The oil and the seeds are used as stimulants, aromatics or carminatives.

Apium graveolens L. Sp. Pl. 264. 1753.
Apio, celery.

Native of Europe and widely grown as a vegetable. The cultivated form is apparently var. dulce (Miller) Pers. I have seen it grown occasionally or in markets in Guatemala, El Salvador, Honduras and Costa Rica. It is usually of poor quality.

Arracacia xanthorrhiza Bancroft, Trans. Ag. Hort. Soc. Jamaica 1825: 5. 1825.

Apio, arracacia.

Native of Andean South America where it has been cultivated as a food crop. It is propagated from cuttings of the tubers and is said to yield a crop in about four months. Reported from Guatemala and Costa Rica but I have not seen it.

Conium maculatum L. Sp. Pl. 243. 1753.

Perejil de monte, perejil de chucho, cicuta poison hemlock.

Native of Europe and naturalized around the world, occasionally in Central America as a weed. Presumed to be the hemlock by which Socrates was put to death, and employed in the poisoning of criminals.

Coriandrum sativum L. Sp. Pl. 256. 1753.
Culantro, culantro de Castilla, cilantro, coriander.

Native of Europe and widely cultivated for the aromatic seeds used as a condiment in bakery goods. The essential oil is used as a flavoring in medicine and as a carminative. The green leaves are often used to flavor beans and soups in Central America. Often seen in markets.

Daucus carota L. Sp. Pl. 242. 1753.
Zanahoria, carrot.

Native of Europe and Asia and cultivated around the world for its flavorful root. It is grown and in markets in all Central America. Like many temperate zone crops carrots do not do too well in the tropics. The roots are usually quite hard and often woody. The name Daucus carota var. sativa DC. is sometimes used for the cultivated carrot and D. carota used for the wild or weedy progenitor known as Queen-Annes-lace.

Eryngium foetidum L. Sp. Pl. 232. 1753.

Culantro, culantro real, culantro extranjero, culantro coyote, acapate, alcapate, escorzonera, cilantro cimarrón.

Native or weedy from Mexico, the West Indies, through Central America to South America, naturalized in Asia and Africa. The fresh leaves and plants emit a strong and disagreeable odor which, curiously enough, imparts to soups and other cooked foods an altogether agreeable flavor when used as a condiment. All Central American cooks worth their salt know and use the leaves, and sometimes the roots of this plant.

Foeniculum vulgare Miller, Gard. Dict. ed. 8. 1768.
Enaldo, enojo, fennell.

Native of Europe and cultivated everywhere there, occasionally in Central America. The aromatic leaves and seeds, as

well as the oil from the seeds, are used in flavoring foods. The thickened leaf stalks of one variety are used somewhat like celery.

Pastinaca sativa L. Sp. Pl. 262. 1753.
Parsnip.

Native of Europe. The plant is occasional in Central America but requires a colder climate than obtains here. The roots are inclined to be small with a tough, woody or fibrous center.

Petroselinum crispum (Miller) Wyman ex Kew Hand-list Herb. Pl. ed. 3. 122. 1925.

Perejil, parsley.

Native of the Mediterranean region and now widely cultivated. I have not seen this plant grown in quantity, however it is occasionally seen and offered in markets. The leaves are used to garnish meats and salads.

Pimpinella anisum L. Sp. Pl. 264. 1763.
Anís, anise.

Native of the Mediterranean region and grown for the aromatic seeds which are used to flavor foods. Not popular in Central America.

URTICACEAE

Herbs, shrubs or trees often with stinging hairs, monoecious or dioecious; leaves simple, alternate, opposite or verticilate, entire, dentate or lobate, often with punctiform or linear cystoliths on one or both surfaces, stipule usually present; inflorescences cymose, flowers mostly in glomerules, unisexual or perfect; perinath of 2-5 segments or none; ovary superior or somewhat inferior; fruit an achene, sometimes enclosed in the fleshy perianth.

There are about 40 genera in temperate and tropical regions, about 14 in Central America. The family, except Boehmeria nivea, is of little importance.

BOEHMERIA. Most or all of the 45 or so species contain strong fibers that might be used for rough cordage.

Boehmeria nivea (L.) Gaud. in Freyc. Voy. Bot. 499. 1826.
Ramio, hoja blanca, ramie, China grass.

Native probably of China. Grown experimentally in Guatemala as stock feed and was found to be high in protein. The main use of ramie is as a fiber plant. The fibers are long, three times stronger than any other vegetable fiber and durable. The processing from plant to textile fiber is somewhat complicated and labor intensive. China, India and southeast Asian countries are the principal producers and users.

Debregeasia longifolia (Burm. f.) Wedd. in DC. Prodr. 16, pt. 1: 235. 1869.

Asian. The plant is said to have been introduced about Cobán, Guatemala, perhaps for the fruits which are said to be edible. I have not seen the plant in the vicinity of Cobán.

URERA. There are six or seven species in Central America, most with stinging hairs. The following two, especially, are to be avoided.

Urera baccifera (L.) Gaud. in Freyc. Voy. Bot. 497. 1826.
Chichicaste, chichicaste blanco, ortiga, nigüilla, cow itch.

Native and introduced from Mexico to tropical South America. A shrub or tree to 7 meters that stings severely on contact. Used for hedges to keep out stock and intruders for which purpose it is quite successful. Chichicaste is commonly the name applied to plants which have stinging hairs, while ortiga is more often used in southern Central America.

Urera elata (Sw.) Griseb. Fl. Brit. W. Ind. 154. 1859.
Chichicaste.

Native in the West Indies and northern Central America. The plant stings but not so painfully as the preceeding one.

Urtica urens L. Sp. Pl. 984. 1753.

Chichicaste, chichicaste de caballo, chichicastillo, ortiga, stinging nettle.

European and introduced into temperate regions around the world. A weed in gardens, field and coffee plantations that stings severely.

VERBENACEAE

Herbs, shrubs or trees, sometimes woody vines, branches often tetragonus; leaves mostly opposite, estipulate, simple or palmately compound, entire or variously dentate or cleft; inflorescence cymose, paniculate, racemose, spicate or capitate; flowers mostly perfect, regular or zygomorphic; calyx 4-5 dentate or lobate; corolla sympetalous, regular or irregular and somewhat bilabiate, 4-5 lobed; stamens usually 4 and in two pairs, rarely only 2; staminodes sometimes present; ovary superior with 4-5 carpels, often with 4 lobes; fruit a dry schizocarp or drupaceous, the locules indehiscent or separating into 2 or 4 pyrenes.

A family of about 75 genera of temperate or tropical regions. Many fine ornamentals and a few exceptional timber trees belong here.

AVICENNIA. Three or four species widely distributed in tropical regions often in brackish swamps. Sometimes put into a separate family, Avicenniaceae.

Avicennia germinans (L.) L. Sp. Pl. ed. 3. 2: 891. 1764.

Mangle, mangle salado, palo de sal, culumate, white mangrove, black mangrove.

Characteristic of brackish tidal areas along all the Central American coasts and around much of the tropical world. The bark of this and of other Avicennias contains considerable tannin and is occasionally exploited locally as a tanning material.

Duranta repens L. Sp. Pl. 637. 1753.

Coralillo rosado, heliotropo, pigeon berry.

Perhaps introduced into Central America from the West Indies. An attractive plant often cultivated as an ornamental.

(Homskioldia sanguinea Retzius. The Chinese-hat-plant is sometimes seen in our region as a horticultural plant. The calyx enlarged, membranaceous and colored).

LANTANA consists of perhaps not more than 4 or 5 quite often variable species in Central America. Lantanas are often weedy and at least L. camara is a serious weed in Hawaii and elsewhere in the Old World tropics where it was introduced without the insects that parasitize it in America. The juicy berries of most Lantanas may be eaten by small boys and birds.

Lantana camara L. Sp. Pl. 627. 1753.
Cinco negritos, mora de muerto, cinco cincos.

Widely distributed in tropical and subtropical America, often as a weed around the tropics of the world. The better forms are grown as ornamentals. The flowers vary from white to orange-red. The insipid fruits are edible.

Lippia alba (Miller) N. E. Brown, Fl. Porto Rico 6: 141. 1925.
Salvia santa, salvia sija.

Native or introduced from Texas, Mexico and the West Indies to South America. An infusion of the leaves is used as a remedy for internal or respiratory ailments. Sometimes planted as an ornamental.

Lippia dulcis Trev. Nov. Act. Acad. Caes. pt. 1: 187. 1826.
Orozus, uruzús,

Native or introduced from the West Indies and Mexico to Panama. The aromatic leaves are used as a condiment, as a flavoring for medicines or as a medicine. The roots are licorice flavored.

Lippia graveolens HBK. Nova Gen. & Sp. 2: 226. 1818.
Orégano.

Native from Texas and Mexico south to Nicaragua. The leaves are often used to flavor food or medicines. The leaves of this and perhaps other species are sometimes found in markets, most often as home remedies.

Petraea volubilis L. Sp. Pl. 626. 1753.

Corona de reina, Santa Rica, Chaparro, lija, raspa guacal, purple wreath.

Native or spontaneous from Mexico and the West Indies to Panama. An attractive vine often cultivated as an ornamental. The membranaceous calyx lobes are purple or blue.

Stachytarpheta cayennensis (L. Rich.) Vahl, Enum. Pl. 1: 208. 1804.

Mozote, wild verbena.

Mexico and the West Indies through Central America to South America and in the Old World. Cultivated occasionally for the long spikes of purple flowers. An infusion of the leaves is a supposed remedy for malaria and other fevers, or to treat dysentery.

(Tectona grandis L. — Teak, one of the famous woods of the world and often used in the decks of ships, was grown by the United Fruit Company on the north coast of Honduras. The wood was used there for crossties and for other purpose where resistance to decay and termites was desirable.)

(VERBENA is grown as an ornamental and at least two species are known, V. teucrioides Gill & Hook. and V. tenuisecta Briq. both native of South America.)

(VITEX. — Several species native in our region that are large trees and might be used for lumber, others may be grown as ornamentals.)

VITACEAE

Scandent vines with nodose or articulated stems, often with tendrils; leaves alternate, usually long petiolate, simple to digitately 3-5-foliate or pedate; inflorescence commonly cymose-paniculate or racemose; flowers perfect or unisexual, small and usually greenish; calyx entire or with 4-5 lobes; petals 4-5, free, coherent and soon falling away; stamens 4-5, opposite the petals, inserted at the base of the disk between its lobes; ovary usually immersed in the disk or the disk none; fruits baccate.

The grape family consists of about 11 genera, mostly tropical except Vitis. Four genera are native in Central America.

Ampelocissus acapulcensis (HBK.) Planchon in DC. Monog. Phan. 5: 403. 1887.
Uva, uva silvestre.

Native from southern Mexico to El Salvador. The beautiful big fruits are so sour as to be inedible but are used in El Salvador to make vinegar.

Cissus sicyoides L. Syst. Nat. ed. 10. 2: 897. 1759.
Comemano, sanalotodo, bejuco de gallina, picamano, iasú.

Widely distributed from Mexico and the West Indies to South America. The tough stems are used as cordage. In Costa Rica baskets, sometimes used by coffee pickers, are woven from the stems. The abundant acrid sap is said to produce blisters on the skin but I have never been bothered with it.

Vitis tiliifolia Humb. & Bonpl. in R. & S. Syst. Veg. 5: 320. 1819.

Uva, uva cimarrona, ama uva, bejuco de agua, uva de pájaro, uva montes, agrá, water vine.

Native from Mexico, the West Indies and Belize to Colombia. A piece of the stem a meter long is said to provide a glass of water and perhaps to have saved the lives of people lost and suffering from thirst. I have never tried it. The small fruits are very acid and may be used to make vinegar. Jelly made from this grape is quite acceptable. Occasionally seen in markets.

Vitis vinifera L. Sp. Pl. 202. 1753.
Uva, parra (the vine), vid, wine grape.

Native perhaps of the region of the Caspian Sea. Grapes have been in cultivation for some 6,000 years and now are grown in most suitable regions around the world. The fruits are used to make wine and raisins and as a table fruit. It is said that wine grapes were grown in large quantities by the Dominicans in colonial times at San Gerónimo, Baja Verapaz. Political and religious reasons are said to have been responsible for the decline

of the industry. So far as I know there is little more than a few vines at any one place in Central America now. Grape culture at the Escuela Agrícola Panamericana has not been successful due to fungi and to insect pests. Vitis labruscana Bailey, derived from the fox grape, Vitis labrusca L., gave rise to the Concord grapes and is the dominant parent in Isabella, Iona, Niagara, Diana, Catawaba and other varieties. Some of these may be in Central America.

ZINGIBERACEAE

Perennial herbs, often large and stout; leaves mostly sheathing, the blades sessile or petiolate; inflorescence racemose, spicate, capitate or paniculate; flowers irregular, perfect; calyx usually trilobate; corolla funnelform, trilobate, the posterior petals usually largest; stamens 6, one fertile the others as staminodia; fruit capsular, often fleshy; seeds arillate.

A family with 40-50 genera, mostly in the tropics of the world. There are five genera native in Central America and another introduced.

Curcuma longa L. Sp. Pl. 2. 1753.
Cúrcuma.

Tumeric is both a dye and a condiment used to flavor or color other foods. The main ingredient of curry sauces, much used in India, is tumeric. The curry sauces are of many kinds, compounded with tumeric and a host of other condiments. Tumeric is occasionally cultivated in Central America as a condiment. Thick roots are the part used.

Ekettaria cardamomum (L.) Maton. in Trans. Linn. Soc. 10: 254. 1811.

Cardamum, cardamomo, cardamom.

Native of southeast Asia and in cultivation for centuries. The seeds contain an aromatic essential oil and are used as a spice. The principal sources of the spice are India and Sri Lanka. Considerable cardamom has been grown in Guatemala and in 1948 about 48 métric tons of seed were exported. Most was grown around Cubilgüitz, Alta Verapaz.

Renealmia aromatica (Aubl.) Griseb. Fl. Brit. W. Ind. 601. 1864.

Chucho, tzi, nabay, caramón.

In wet forests from southern Mexico and the West Indies to northern South America. It is reported that the fruits of this or an allied species are used to flavor meat soups in the Petén, also that the leaves covered with tallow are used as bandages for fractures, sprains or superficial inflammation.

Zingiber officinale Roscoe, Trans. Linn. Soc. 7: 348. 1807.

Gengibre, jengibre, ginger.

Native of southeast Asia and used there since ancient times as a condiment or a spice. It was the first of the oriental spices brought to Europe. Ginger is now grown in tropical regions around the world. The rhizome is the part used and it may be prepared in a multitude of ways. Ginger is grown in all Central American countries in home gardens for local consumption. The rhizomes or prepared ginger are to be found in many markets. I saw ginger abundantly naturalized in the Congo basin in Zaire but never in Central America although it is said to be naturalized in Costa Rica. Jamaica is the largest producer of ginger in the western hemisphere.

ZYGOPHYLLACEAE

Herbs, shrubs or trees, frequently strong scented and resinous, the nodes of the branches often swollen; leaves opposite or alternate, stipulate, simple to digitately compound or pinnate; flowers perfect, regular or nearly so; sepals usually 5 and free; petals 5, free, imbricate, valvate or convolute; stamens twice as many as the petals, in two series; ovary superior, of 2-5 united carpels with a common style; fruit capsular or separating into nutlets, these often spine-armed.

A family of about 20 genera dispersed in warm or tropical regions. There are three genera in Central America.

Guaiacum sanctum L. Sp. Pl. 382. 1753.

Guayacán, lignum vitae, palo santo.

Native from Florida, Mexico and the West Indies to northern South America. One of the hardest and heaviest woods known. The largest log recorded was about 2.7 meters long and 0.9 meters in diameter with a weight of 1,942 kg. The wood was introduced into Europe about 1508 for its supposed medicinal properties, a specific for most of the diseases of mankind! The wood or the resin from it is no longer used in official medicines. The name lignum vitae, "wood of life" came from the many supposed medicinal uses. The wood is used where great strength and tenacity is required. The main use of the wood is as self-lubricating underwater bearings, as on the propeller shafts of ships. The tree is very attractive when in full flower. Large trees, with trunks more than 20-30 cm. in diameter are rare now. The wood is sold by the pound and is quite valuable.

END