LABIATAE

Herbs, shrubs or rarely trees with simple or compound, opposite or whorled leaves; stems usually quadrangular; inflorescences composed of dichasial or circinnate cymes, occasionally a solitary flower, the cymes sometimes congested and forming head-like or spike-like inflorescences; flowers perfect, zygomorphic; calyx usually 5-lobed, or bilabiate and apparently with only 2 lobes, often with conspicuous ribs; corolla bilabiate and 5-lobed or usually so; stamens 2 or 4, borne on the corolla; ovary superior, 4-lobed; fruits usually consisting of 4 nutlets.

A large family of some 200 genera and 3,000 species found over most of the world. There are many attractive kinds in Central America, especially of the genus Salvia.

Hyptis oblongifolia Benth. ex DC., Prodr. 12: 125. 1848.

We collected and dried leaves of this species and used them, as a substitute for sage, in flavoring sausage for which it is quite suitable. The species is common in the pine forest area of Honduras and Guatemala.

Hyptis suaveolens (L.) Poit. Ann. Mus. Paris 6: 472, t. 29, f. 2. 1806.

Chián, chan, orégano.

The seeds exude a mucilage when soaked in water and are eaten as a porridge or used to prepare a beverage. The aromatic foliage is said to be placed in rooms as a mosquito repellent.

Mentha citrata Ehrh. Bietr. 6: 150. 1791.
Yierba buena, lemon mint.

I found this species offered for sale in the market in Guatemala where it was said to be used in flavoring drinks and food.

Ocimum basilicum L. Sp. Pl. 597. 1753.
Albahaca, albahaca de limón, basil.

The leaves of this cultivated species are used in flavoring food.

(Ocimum kilimandscharicum Guerke in Engler, Pflanzenw. Ost-Afr. C. 349. 1895.

This species, of tropical east Africa, has a rather high content of camphor and might prove to be a useful crop in Central America. It has not been grown here so far as I know.)

Ocimum micranthum Willd. Enum. Hort. Berol. 630. 1809.
Albahaca, albahaca montés, albahaca de gallina.

The herbage is used in the preparation of soups and stews to which it imparts a characteristic flavor.

Salvia hispanica L. Sp. Pl. 25. 1753.
Chan, chía oil.

The seeds swell when placed in water and are often used in making refreshing drinks. The seeds contain some 24-34 percent of chia oil, an oil similar to perilla oil. The cultivation of the plant, to produce a drying oil, might be worth trying in Central America but so far as I know this has not been done. Native of Mexico.

Salvia potius Epling, Fedde Rep. Sp. Nov. Beih. 110: 105. 1938.
Chian.

The seeds when mixed with water form a mucilaginous but refreshing beverage. It has been reported that the oil was extracted and used in painting in ancient Mexico.

The distinction between the seeds of Salvia hispanica and S. potius and their uses may be questioned. I have not seen seeds of either species offered in any market in Central America nor have I seen them used.

LAURACEAE

Trees or shrubs, usually aromatic, or rarely parasitic scandent herbs; leaves alternate, simple, entire, penni- or triplinerved; inflorescences paniculate, racemose, spicate or umbellate, the bracts usually soon deciduous; flowers small, actinomorphic,

perfect, rarely unisexual, sometime polygamodioecious; perianth segments usually 6, mostly undifferentiated, deciduous or the outer series persistent; stamens usually in 3-4 series of 3 each, alternate, connate to the perianth; anther 2-4-celled, opening by valves; pistil 1, the ovary superior; fruit a drupe or berry, usually subtended by the persistent and sometimes much enlarged perianth and pedicel; seed one, without endocarp.

This is a large and difficult family in Central America with 9 or 10 genera and many species (about 45 genera and perhaps 1,500 species world-wide), the genera are often difficult to distinguish and botanists do not agree on their delimitation.

Many members of the family are important economically. Avocados now are an important fruit crop in many parts of the world, cinnamon is found in most kitchens, camphor is used in medicines and manufactured articles, the woods of many kinds are used in furniture and cabinet work.

Beilschmiedea anay (Blake) Koesterm. Rec. Trav. Bot. N'eerl. 35: 847. 1938.
Anay.

The fruit is shaped like a small pear, the flesh is yellow, high in oil, with a rich flavor. Known from Guatemala and Costa Rica, also in Colombia.

Cinnamomum camphora (L.) Nees & Eberm. Med. Pharm. Bot. 2: 430. 1831.
Alcanfor, camphor.

Camphor, extracted from the wood of the tree, is a whitish translucent terpene ketone used in medicine as a counterirritant for infections and in the treatment of itching and pain.

Occasionally planted as an ornamental but not common. It is reported (Higbee & Lee, in Wilson: New Crops for the New World, 139. 1945) that some 10,000 trees had been established on a finca near Guatemala City. So far as I know nothing has come of this plantation.

Cinnamomum zeylanicum Breyne, Eph. Nat. Cur. Dec. Ann. 4: 139. 1789.
Canela, cinnamon.

Cinnamon is grown in Central America and limited amounts get into local markets. Plantations were established in Alta Verapaz in Guatemala but I do not know of commercial quantities being produced in recent years.

In cultivation the young trees are cut back and suckers develop. The bark of these long, slender shoots furnish the quills of cinnamon. Cinnamon is a commonly used spice in our region and many cooks believe that almost any dish can be improved by its generous use.

Litsea flavescens Bartlett, Proc. Am. Acad. 44: 599. 1909.
Lentisco.
Used in Costa Rica as a flavoring for food.

Litsea glaucescens HBK. Nov. Gen. & Sp. 2: 168. 1817.
Laurel, laurel de especia, laurelillo.

The laurel like most other Litseas in our area, has aromatic leaves similar to those of bay. The leaves are used in flavoring food, most especially soups and stews. Occasionally cultivated. Dried leaves are in most large Guatemalan markets. Native from Mexico to Honduras.

Litsea guatemalensis Mez, Jahrb. Bot. Gart. Berlin 5: 479. 1889.
Laurel, aguarel.

The leaves are used as a spice in Guatemala where it is endemic.

Litsea neesiana (Schauer) Hemsl. Biol. Cent. Am. Bot. 3: 76. 1882.
Laurel, spac-tzé.

The leaves are used as a spice in Mexico, Guatemala and Honduras. We have dried leaves of this species in Honduras and found them to be quite satisfactory as a spice in soups and stews.

NECTANDRA. A genus of shrubs and trees common from Guatemala to Costa Rica (and elsewhere). Most probably these trees get into the lumber trade but what the species may be is

difficult to say. The name given to many of the kinds of Nectandra is aguacatillo or in Costa Rica quizarrá. Botanists can hardly do better

Nectandra reticulata (Ruiz & Pavón) Mez, Jahrb. Bot. Gart. Berlin 5: 404. 1889.
Quizarrá, chualá, canoj.

Presumed to be native from Mexico to tropical South America and used in construction or as lumber.

Nectandra sinuata Mez, Jahrb. Bot. Gart. Berlin 5: 402. 1889.

Aguacatillo, tepeaguacate rojo, conoj blanco, conoj negro.

The bark and wood of this endemic Guatemalan species is said to yield a yellow dye.

OCOTEA. A vast and nearly impossible genus of some 200 species in tropical America. A few are large trees and doubtless get into the lumber trade.

PERSEA. Avocados are American, Mexican and Guatemalan in origin. Two species, with varieties, are involved with the greater part of those now in cultivation. The little "Mexican" avocado was in use as a food plant as much as 10,000 years ago by early man in Mexico. The so-called "West Indian" avocado distributed down the Atlantic side of North America and from there certainly into northern South America and eventually down the coast of Peru. It was in Peru as early as 1800 B.C.

The Guatemalan avocado is derived from a small-fruited wild species that I have studied and collected from Mexico to Costa Rica. The "Guatemalan" I think came into being in the interior valleys of Guatemala, doubtless as a selection from the indigenous Persea nubigena. However it could have originated anywhere from Mexico to Guatemala, and perhaps more than in one place. There is no way that I know to postulate the age of the Guatemalan avocado but it must be the most recent of the pre-Columbian cultigens. It was abundant in Guatemala in conquest times, the early 1500s, but doubtless goes back well beyond that epoch.

See my account of "The Avocados, A synopsis of the Genus Persea, subg. Persea, Econ. Bot. 31: 315-320. 1977."

Persea americana Miller, Gard. Dict. ed. 8. 1768. P. gratissima Gaertn. Fruct. & Sem. 3: 22. 1805.

Aguacate, avocado, alligator pear, butter pear, on, un, oj, o, ju, "West Indian" avocado.

The so-called "West Indian" avocado was derived, I believe from the little "Mexican" avocado by selection over a period of many centuries. Widely distributed in the wet warm tropics and carried by early man as far as Peru by 1800 B.C. Almost all if not all of the trees are seedlings, most producing quite acceptable fruits of good food value. An oil may be extracted from the fruits.

Persea americana var. drymifolia (Schlecht. & Cham.) Blake, Journ. Wash. Acad. Sci. 10: 15. 1920.

Aguacate de anís, aguacatillo, aguacate mexicano, Mexican avocado, "Mexican."

The little avocado native of Mexico from which I believe the "West Indian" avocado was derived by selection. It is common and often abundant in east central Mexico and perhaps to Chiapas, doubtless carried by man in pre-Columbian time to Central America. The fruits are small, usually black when mature, with a decided anise flavor and odor. I have seen it as a rare dooryard tree in Guatemala and El Salvador, where it is little appreciated since the superior "Guatemalan" is readily available.

Persea nubigena L. Wms. Ceiba 1: 55. 1950.

Aguacate, aguacate de mico, aguacate silvestre, aguacate de montaña. This montane species is the commonest and most widely distributed of the native avocados from Mexico to Costa Rica. Fruits are small and only rarely eaten. It is the progenitor of the Guatemalan avocado.

Persea nubigena var. guatemalensis L. Wms. Econ. Bot. 31: 318. 1977.

Aguacate, "Guatemalan," Guatemalan avocado.

Considered by many to be the best of the avocados and certainly the best of those that were here in pre-Columbian time. Common in the high interior valleys of Guatemala, widely distributed in historical times. Doubtless the Fuerte-type cultigens were partly derived from this Guatemalan avocado but whether or not previous to conquest times I have no guess. These avocados which I would call cultigens were discovered in highland Mexico after the turn of this century.

Fruits variable, mostly round but sometimes ovoid, green or sometimes black, smooth-skinned or usually rugose, weight to one kilogram or more but usually much less. Most trees are seedlings.

Pulp of the fruits is used by Guatemalan women in washing their hair and to this is credited the beautiful, shining hair of many of them.

Persea schiedeana Nees, Syst. Laur. 130. 1836.

Yas, coyó, coyou, coyocté, kiyaú, cotoyó, chupte, chucte, chaucte, xucte, chalte, aguacate de monte, wild pear.

A tree, often large, distributed from the gulf coast of Mexico through Central America to Panama and perhaps Colombia. How much of this range is natural and how much is due to dispersal by man is impossible to say. The tree is capable of invading forest situations, open slopes of old fields, and door yards from sea level to nearly 2,000 meters, or it may be native in most of these same situations.

The fruits are variable as might be expected from widespread seedlings selected by man over many centuries. Some fruits are quite large with the brownish pulp free from fibers or nearly so, others are small with but little flesh and abundant fiber. I have seen fruits offered in markets, except in Honduras and Nicaragua. Yas is the name commonly used in Costa Rica while the other names given are from Guatemala, El Salvador and Belize.

LECYTHIDACEAE

Large, handsome trees of low tropical forests. Leaves often very large and crowded at the ends of branches, alternate; inflo-

rescence racemose, axillary or terminal; flowers perfect; sepals and petals 4-6, or petals lacking; stamens many and often united in series at the base; ovary inferior, 2-6-celled with few-many ovules in each cell; fruit (in ours) a large woody capsule dehiscent by a "lid."

A pantropical family of about 20 genera. The best known tree of the family in America is Bertholletia excelsa H. & B., the Brazil nut or nigger-toes, mostly found in the Amazon basin of Brazil.

Lecythis costaricensis Pittier, Contr. U. S. Nat. Herb. 12: 99, tt. 6-8. 1908.

Olla de mono, cocobola.

A large tree with enormous urn-shaped fruits containing many nuts of good flavor. These nuts have not been seen offered in any Costa Rican market. The wood is used in cabinetry for its color and strength.

LEGUMINOSAE

Herbs, shrubs or trees; leaves alternate (mostly), pinnately or sometimes palmately compounded, rarely simple by suppression of leaflets, stipulate or rarely estipulate; flowers perfect and zygomorphic or actinomorphic (in Mimosoideae); calyx with 5 united lobes; petals 5 or lacking (rarely) or reduced in number, separate or the dorsals connate; stamens usually 10 to sometimes many in Mimosoideae, united or distinct; pistil 1, unilocular, ovary superior, the ovules 1-many; fruit a legume or "pod," tardily dehiscent or not; the seeds with a leathery testa are often called "beans."

The Leguminosae is easily divided into three subfamilies and these considered by many to be separate families; the Papilionoideae with zygomorphic and papilionaceous flowers with the two lower anterior petals forming a keel and the dorsal petals forming a banner; the Caesalpinioideae with zygomorphic flowers having 5 (usually) distinct petals and the posterior one innermost; the Mimosoideae with actinomorphic flowers and the perianth valvate in the bud, the stamens are often many.

The Leguminosae is a large family with more than 500 genera 12,000 or more species. It is a conspicuous family in Central America containing important economic plants, in the wet forest many important timber trees and the thorn or scrub of the dry tropics are made up mostly of plants of this family.

There are about 125 genera and perhaps 600-700 species of legumes in Central America. Plants in more than 60 of these genera have some economic use.

Abrus precatorius L. Syst. ed. 12. 472. 1767.
John Crow bead, yocoak.

The handsome seeds have been used in making necklaces and charms. These seeds are poisonous and are said to have been used in criminal poisoning in Central America. Charms and other ornamental objects should not be given to babies or children because of the danger of poisoning. The import of ornaments made from these seeds has been excluded in the United States.

Plants have been reported to be poisonous to stock. They are found in our area in thickets little above sea level.

Roots have been used as a substitute for licorice in India.

ACACIA. A difficult genus of perhaps as many as 30 species in Central America. Gums exude from wounds in many of these species and these gums are not unlike gum arabic. African species of Acacia that produce gum arabic might be introduced into our dry region as a possible peasant crop. Several species of Acacia are grown in Africa for tan bark under the market name of wattle (A. decurrens, others). These species are not only useful for tan bark but also as fire wood. I was told it produces about twice as many BYU per volume as any other wood which could be grown there. Since the bark and the leaves contain a high percentage of tannin they might be "goat-proof," an advantage in the dry lands of Mexico and Central America.

Most of the gums from acacias may substitute for gum arabic which, generally is almost any gum that dissolves completely in water to form a mucilage.

Acacia farnesiana (L.) Willd. Sp. Pl. 4: 1083. 1806.

Espino blanco, espino, espino ruco, subín, aromo, clavito, cachito de aromo, cornezuela, cuntich, cashaw, espinal (a place where it grows).

Bark and fruits rich in tannin, the pods sometimes used to make ink, the wood is often used as fuel. A gum from the stems is used to make a mucilage. In southern Europe perfume is manufactured from the flowers. Common in dry areas of our region, mostly below 1,000 meters, it never gets very large and is more a shrub than a tree.

Acacia glomerosa Benth. Lond. Jour. Bot. 1: 521. 1842.

Espino cantemoc, white tamarind, prickley yellow, espino blanco, llora-sangre.

The inner bark yields a small amount of sweet yellowish resin.

Acacia senegal (L.) Willd., Sp. Pl. 4: 1077. 1806.

Gum arabic. Gum arabic from the semidesert areas in Africa is grown under conditions not unlike those to be found in several hot dry valleys of Central America. Whether or not the plant could be grown in competition with the cheaper African labor is another question.

Acacia spadicigera Schlecht. & Cham. Linnaea 5: 594. 1830.

Pico de gurrión, pico de gorrión, subín, subín blanco.

The pulp of mature fruits is eaten. Quantities of the pods are often seen in markets of the Guatemalan highlands, brought up from the lowlands. Mexico to Costa Rica below 1,000 meters.

Aeschynomene americana L. Sp. Pl. 713. 1753.

Pega pega, plumón, pie de paloma, huevos de rana.

One of the commonest weeds in Central America, extending from the lowlands well into the mountains. Old corn fields are often overrun with the plant.

Albizzia idiopoda (Blake) Britt. & Rose, N. Am. Fl. 23: 44. 1928.

Salem.

The bark is used in Belize as a tan bark.

Andira inermis (Sw.) HBK. Nov. Gen. & Sp. 6: 385. 1823.

Almendro, almendro macho, almendra montés, almendra real, almendra cimarrón, macayo, maca colorada, cabbage-bark, corn wood, black blossom, carbón, iximche, partridge wood.

The bark has an unpleasant odor and is used as a vermifuge and purgative. In large doses it is said to be poisonous, as are the seeds. The wood is hard, heavy, durable, polishes well and is termite resistant and is used in turnery for tool handles and the spokes of cart wheels. In export trade the wood is called partridge wood and is used for canes, umbrella handles, and billard cue butts. - Mexico to South America and western Africa. Formerly common and often in pure stands on the Pacific plain of Guatemala.

Arachis hypogaea L. Sp. Pl. 741. 1753.

Maní, cacahuete, cacao de tierra, peanut, groundnut.

Peanuts are grown occasionally in all the Central American countries and are to be found roasted or raw in most markets, often rather expensive though not much appreciated. Native of southern Brazil and probably not in North America until after conquest times. Carried from Brazil to Africa by Portuguese explorers and from Africa to Virginia by slaves. Grown extensively in Africa, India, China, and in the southern United States. A president of the United States was a peanut farmer.

Bauhinia purpurea L. Sp. Pl. 375. 1753.

Pie de cabra, árbol orquídeas, orquídea del pobre, orchid tree.

A native of southeastern Asia, planted as an ornamental in the tropics and subtropics of the world.

Caesalpinia coriaria (Jacq.) Willd. Sp. Pl. 2: 532. 1799.

Nacascol, nacascolete, cascalote, nacascolo, macascolote, tinaco, dividiví (trade name for tannin or the pods used for tanning.)

The pods are rich in tannin, perhaps as much as 25o/o of the weight. Colombia, Mexico and Venezuela were principal producers. The bark is said to be used for tanning but the trees are usually small. Black ink has been made from the pods in Mexico. In Guatemala it has been used as a black dye for textiles. Native from Mexico to Colombia and Venezuela.

Caesalpinia eriostachys Benth. Bot. Voy. Sulph. 88. 1844.
Pintadillo, iguano or iguana.

The seeds in El Salvador are said to cause paralysis in animals that eat them.

Caesalpinia pulcherrima (L.) Swartz, Obs. Bot. 166. 1791.

Barbón, barbona, flor barbona, flor de Sta. Lucía, cabello de angel, guacamaya, clavelina, hierba de espanta, espanta lobos, barba de sol, bird-of-paradise flower, flambeau, Barbados pride.

One of the most ornamental of the shrubs or small trees and especially appreciated in El Salvador. Now found in all tropical and subtropical regions of the world. Perhaps native in Mexico and Central America.

The fruit contains a tannin, as do the leaves and flowers. The seeds contain a mucilage but so far as I know it has not been used in our region. Crushed leaves are reported to be used in Guatemala to stupify fish.

Caesalpinia vesicaria L. Sp. Pl. 381. 1753.
Espino negro.

An infusion of the pods with iron sulphate is said to give a permanent black dye. Found on the Yucatan peninsula in Mexico and in Guatemala. Lesser Antilles.

Caesalpinia violacea (Mill.) Standl. Carnegie Inst. Wash. Publ. 461: 61. 1953.

Cante, brasiletto, chacte.

The wood gives a red dye thought to have been used by the Maya for imprinting the "red hand" found in the interiors of some of their buildings.

Cajanus cajan (L.) Millsp. Field Mus. Bot. 2: 53. 1900.

Gandul, cachito, frijol chino, frijol japonés, chicaro, chicaro de palo, alberga, arbeja, quimbalillo, timbolillo, frijol de palo, pigeon pea, petipoá (a Costa Rican corruption of petis pois.)

An old world species grown mostly below 1,500 meters in the American tropics. The erect shrubs bear for several years and produce fresh pigeon peas most of the year. Dry seeds are found occasionally in markets. The plant replaces nitrogen into the soil and may be used as a green manure.

The seeds, cooked like beans, are not much appreciated in our region, except by coastal West Indians.

Canavalia ensiformis (Jacq.) DC. Prodr. 2: 404. 1825.

Frijol espada, frijol de burro, Horse bean, abono negro, Jack bean.

The unripe seeds and pods are eaten and are fairly good. The plants are used as fodder and as green manure. Said to be native of tropical America but I have seen it only as a cultigen or as an escape.

CASSIA

A large and somewhat difficult genus. It is possible that some in addition to those reported here may find use in our area. Senna, an ancient drug, is obtained from several species in Africa and Asia. Many contain tannins (and therefor dyes) and have purgative properties. The seeds may be eaten and several are reported to be used as a replacement for coffee or to adulterate coffee (Cassia occidentalis L., C. reticulata Willd.) The largest genus of the Leguminosae in Central America, some are attractive ornamentals but most are unattractive and weedy.

Cassia bicapsularis L. Sp. Pl. 376. 1753.

Moco, moco de gallo, moco de chompipe, gueguecho, caraguillo, guijolillo, vainillo, wild currant, wood creeper.

A suffrutescent plant of which the pulp of the legume is sweet and edible with somewhat the flavor of tamarind.

Cassia fistula L. Sp. Pl. 377. 1753.
Cañafístula, caña fístola.

A very attractive tree when in flower, native of tropical Asia. Occasionally planted in dry regions of Central America as an ornamental. The pulp from the pod is used in local medicine as a purgative.

Cassia grandis L. f. Suppl. Pl. 230. 1781.

Carao, caña fístula, carambano, caragua, stinking toe, beef-feed, mucut, bookut, bookoot.

Native or spontaneous from southern Mexico to Panama, the West Indies and northern South America, perhaps spread by man over a part of the area. A very attractive tree when in flower, found around dwellings as an ornamental and in old fields and along roadsides. The pulp surrounding the seeds is eaten but it is purgative. An ointment made from the leaves and lard or tallow is used to treat cutaneous diseases, especially in dogs.

Cassia reticulata Willd. Enum. Pl. 443. 1809.
Barajo, sambrán, saragundí, saragundín, zambrán.

A showy shrub or small tree. It is reported from Costa Rica that an infusion of the leaves is a remedy for ringworm. Like many other Cassias it is said to be purgative or even poisonous. Found from Mexico to Panama and South America, mostly below 800 meters.

Cassia tora L. Sp. Pl. 376. 1753.
Ejotil, ejote de invierno, frijolillo.

The seeds have been used as a mordant in dying textiles blue. The leaves are said to have purgative properties. Uncommon in our region but perhaps native.

Cassia xiphoidea Bertol. Fl. Guat. 415. 1840.
Escobillo, barbón, flor amarilla, moca, comayagua.

Branches of this, and perhaps of similar species, are used to make brooms or brushes.

Ceratonia siliqua L. Sp. Pl. 1026. 1753.
Algarrobo, espina corona, garrofín, tragón, carob, St. John's bread, locust bean.

An important tree in the dry Mediterranean region where it is used for food (the sweet pulp of the legume) and for feed for animals; a gum or mucilage called tragasol, extracted from the pods, is useful in the manufacture of textiles and paper. The trees are cultivated, or at least encouraged, in Spain, Italy, Greece, Portugal, and in north Africa, Israel and elsewhere. So far as I know it is little cultivated in Central America but should be grown along the drier coastal areas and dry interior valleys as an out-of-hand supplement to the diet, if not as an export crop.

These were the biblical "locusts" that were the food of St. John and the prodigal sons.

Cicer arietinum L. Sp. Pl. 738. 1753.
Garbanzo, chick-pea.

Not known as a wild plant but doubtless native in the eastern Mediterranean region. It is an exceedingly important food crop in Spain and India. The seeds are one of the best leguminous foods for man and very nutritious. Little grown in Central America, although it is suitable in our region. The foliage is poisonous so may not be used as a fodder.

COPAIFERA: Hard resins or copals are derived from trees of this genus in South America (C. officinalis L.) but I have no records except as below of use in our region.

Copaifera hemitomophylla Donn.-Sm. Bot. Gaz. 27: 332. 1900.
Cativo.

The resin which comes from the trunk of the tree is said to be efficient in curing ulcers. Costa Rica only.

Crotalaria longirostrata Hook. & Arn. Bot. Beechy Voy. 6: 285. 1838.

Chipilín, chipilín de comer, tcap-in, chop.

Commonly used in Guatemala and El Salvador, less so in other countries, as a pot herb. It is in most markets in these two countries in season. It is collected from spontaneous plants of corn fields or gardens. Occasionally grown as a garden crop. Native from Mexico to Costa Rica.

Crotalaria vitellina Ker in Lindl. Bot. Reg. 6: t. 447. 1820.

Chipilín, chipilín montés; chipilín de caballo, chipilín de venado, chipilín de zope, cohetillo.

Commonly used as a pot herb and perhaps not always distinguished from C. longirostrata. These two species are perhaps the only ones used as pot herbs. Native from Mexico to Panama and in Cuba.

Cyamopsis tetragonoloba (L.) Taub. in Engler & Prantl, Natürl. Pflanzenf. 3: 259. 1894.
Guar.

This crop, so far as I know, has not been grown in Central America. It is an important crop with many varieties in India where it is grown under dry land conditions with 900 mm. or less of rain. The pods of certain varieties are eaten, some are grown as a green manure crop and others are grown for the seed which contains some 35o/o of a gum. The gum is important in processing certain foods, is used in mining, in paper and textile making, and in explosives, drugs and cosmetics.

DALBERGIA: There are about a dozen species of Dalbergia in the Central American countries. Several, at least, are of commercial importance because of the strong, durable and dark colored wood. The wood of some kinds or perhaps all of them is useful for knife handles since it is "oily" and tends to be water resistent. The woods of some species is used in cabinetry, especially in Honduras and Costa Rica. The tone bars of Guatemalan marimbas are often made from "rosewood." The fine dust arising from sanding or working these "rosewoods" may cause a dermatitis similar to that caused by poison ivy.

Dalbergia cuscatlanica Standl. Field Mus. Bot. 4: 215. 1929.
Granadillo, nogal.

A large tree of the Pacific coastal forests of Guatemala and El Salvador. The hard and heavy wood is beautiful when aged, turning dark red. Much used for tool handles, inlays in jewelery boxes and other fancy cabinetry. The fine dust from wood working may cause a dermatitis. Perhaps confused with similar species of Dalbergia.

Dalbergia retusa Hemsl., Diag. Pl. Mex. 8. 1878.
Cocobola, palo de rosa.

Used in cabinetry in Costa Rica. A hard, heavy, durable wood. Once exported and perhaps still is. The same common name is used in Costa Rica for the wood of Lecythis costaricensis. The two woods may be confused.

Dalbergia stevensonii Standl. Trop. Woods 12: 4. 1927.
Honduras rosewood, rosewood.

Native of Belize, a well known commercial timber and once exported in small quantities. Perhaps the finest of rosewoods and used in knife handles, cabinetry, xylophone and marimba bars. This tree was once grown on the north coast of Honduras by the United Fruit Company.

Dalbergia tucurensis Donn.-Sm. Bot. Gaz. 46: 111. 1908.

Granadilla, granadillo, junero, ronrón, chaperno, rosewood, acuté.

This is the rosewood of Honduras, the granadilla of Belize, and of Guatemala the ronrón, junero, acuté, granadillo and chaperno. The wood is so heavy it will not float. The tree was once plentiful along the coasts of the Gulf of Honduras. The wood is much appreciated by the excellent craftsmen of Honduras who make fine furniture of it.

Dalea nutans (Cav.) Willd. Sp. Pl. 3: 1339. 1803.

Escoba de patio, pata de gallo, cancha, canchalagua, pie de paloma.

Bunches of stems and branches tied together make rough brooms or brushes. Other species of Dalea, called escobilla, also may be used. The roots exude a yellow juice when crushed and with lime are said to produce a red or a yellow dye. Common and often abundant in old fields from Mexico to Costa Rica.

Delonix regia (Aubl.) Sandwith in A. C. Sm. Lloydia 2: 184. 1939.

Poinciana, flamboyán, framboyán, malinche, matrimonio, Morazán, arbol de fuego, acacia, guacamayo, flamboyant.

Native of Madagascar. The tree is now found everywhere at middle elevations to the lowlands of Central America. It is one of the most striking of ornamental trees. A good group of them in flower is to be long remembered. A yellowish or reddish-brown gum is exuded and this forms opalescent mucilage with water. The gum is probably not collected in our region.

My old associate, Paul C. Standley, classed the flamboyant along with his much despised Petunia, saying that it had little to recommend it since it was not attractive but actually ungainly most of the year.

(DERRIS. Plants of this genus, perhaps D. elliptica (Wall.) Benth., of the East Indies has been reported as a crop in Guatemala but there is probably none grown here now. We had it growing experimentally at Escuela Agrícola Panamericana in the 1940s. It is a source of rotonone for insecticides.)

DESMODIUM. There are many weedy species of Desmodium in Central America. Segments of the ripening pods disarticulate easily and stick tenaciously to clothing or the fur of animals and so are disemminated. Desmodium intortum (Mill.) Urban is one of the worst of them. The almost universal name for the pods adhering to a pant leg is pega pega.

Desmodium nicaraguense Oerst. Vid. Medd. Kjob. 1853: 16. 1853.

Engorda-caballo.

The plant is sometimes grown in Central America as a dry season supplement for animals. Usually the plants are grown in

rows and the tops cut off and fed while fresh. Five or six cuttings are all that can be obtained before the plants become too woody and must be renewed. The species is native from Mexico to Nicaragua. The wild plants rarely show evidence of being cropped by animals.

Dialium guianense (Aubl.) Sandwith in A.C. Sm. Lloydia 2: 184. 1939.

Tamarindo, paleta, palo de Lacandón, tamarindo prieto, cuatchi, ironwood, wild tamarind, canillo.

Formerly and sometimes still (1978), one of the most abundant timber trees along the Atlantic lowlands of Central America. The wood is used to make railroad ties, bridge timbers and other things where a durable termite and decay resistant wood is desired. The tree is said once to have made up about fifteen percent of the forest along the Ocongwas River in Nicaragua.

Diphysa floribunda Peyr. Linnaea 30: 78. 1859.
Guachipilín, palo amarillo.

A small tree or shrub of which the wood is greenish-yellow or reddish-brown after exposure to the air. Formerly the wood was exported for the yellow dye that it yields, and perhaps is still used for that purpose locally. The wood is heavy and durable and is used to make fence posts and agricultural implements. Mexico to El Salvador.

Diphysa robiniodes Benth. in Benth. & Oersted, Vid. Medd. Kjob. 11. 1853.
Guachipilín, huachipilín, much, palo amarillo.

A yellow dye may be extracted from the wood or flowers with alcohol. The residue becomes intense red with sulphuric acid. Mexico to Panama.

Dipteryx oleifera Benth., in Hook. Kew Journ. 235. 1850.
Almendro, Tonka bean.

There is possibly only one species of Dipteryx in Central America. Whether or not the name above is the one that should

be used or whether D. panamensis (Pittier) Record is the correct one I do not know. Honduras to Panama.

Paul J. Shank, a forester and for years my associate in Central America wrote me in 1958 his observations of the use of the fruits from this tree as an aphrodisiac by the Black Caribs on the east coast of Nicaragua:

"It was the Tonka bean, Dipteryx oleifera, that put the negros into business. . . . the fleshy nut or bean is mashed and rolled into a paste which is mixed with milk or coconut water and served. It has a rich nutty flavor, is quite delicious and satisfying. It satiates the apetite more than a malted milk does. So far as its properties as an aphrodisiac are concerned I am not sure. The fruits are in season and falling from the trees in February and March and it is during these months that the natives have their so-called "maypoles" which are something the like (of which) I have never seen before or since. They gather on the beach or opening in the forest and start with a pure African style dancing. Drum, a hand type and a bamboo flute make up the music or rhythm. As the night wears on they warm up more and more and the couples take off for the outer fringes of darkness while new couples take their place. This goes on until daylight. I was an invited guest to the affair and invited to take part!"

Dr. Richard E. Schultes tells me that he finds no record in the economic library in the Botanical Museum at Harvard of the use of Tonka beans as a aphrodisiac.

Related species, Dipteryx odorata (Aubl.) Willd. and D. oppositifolia (Aubl.) Willd. are the Tonka beans or coumarin of commerce. An alcohol extract from the seeds was once used as a substitute for vanilla. The beans, or an extract were used in flavoring tobacco, in making perfume, cosmetics, soap and other things. Its use in flavoring foods is now restricted.

Dolichos lablab L. Sp. Pl. 725. 1753.
Lablab, chimbolo verde, frijol dólico.

A perennial vine, sometimes treated as an annual, used for feed for animals. The young, tender pods when used as cooked green beans are quite good. Probably African but now grown in the tropics every where, sometimes even as an ornamental.

Entrada gigas (L.) Fawcett & Rendle, Fl. Jamaica 4: 124. 1920.

Habilla.

The bark is astringent and the seeds thought to have medicinal properties as a remedy for snake bites. The large seeds from these sea-side plants are widely dispersed by ocean currents.

Entada polystachia (L.) DC. Mém. Lég. 434. 1825.

Lengua de buey, quiamol, cola de zorillo.

Stems and roots macerated in water give a lather. It is possibly due to this that it is believed that washing the hair in a solution will cause the hair to become curly or wavy.

Enterolobium cyclocarpum (Jacq.) Griseb. Fl. Brit. W. Indies 226. 1860.

Guanacaste, conacaste, genicero, jarina, tabroos, ear tree (from the shape of the fruits.)

One of the large trees of Central America. The crown is wide-spreading and in many villages in the drier areas of Central America the markets are held under these trees. The tree has doubtless been planted outside of its natural range as a shade tree, for it occurs mostly at elevations less than 500 meters. In the Zamorano valley at 800 meters it behaves like a native tree but could have been brought there in pre-Columbian times. It is spontaneous or native from Mexico and the West Indies through Central America and Panama to northern South America.

The wood of the tree is variable, some being so soft that it is of little use but most serve quite well and is used for many purposes in construction. The wood is attractive, often walnut-brown and fairly durable except in contact with the ground where it is attacted by termites. It is not a high grade wood for cabinetry. Formerly lumber was exported but now trees are much reduced in numbers and probably not exported. Workers are often allergic to the dust while working with this wood. Saw dust thrown into streams is said to kill fish and even to sicken or kill livestock. A dark colored gum, called goma de guanacaste in commerce, is a substitute for gum arabic.

The tree gives its name to a province in Costa Rica and to villages in Guatemala. People with noticeably large ears often get the nick-name of "Guanacaste."

ERYTHRINA

A genus of 100 or possibly more species native in the tropics of both hemispheres. Some are very attractive due to an abundance of colorful flowers but many bear few flowers at a time and are spiny fence-row trees. Probably the flower buds of most species are boiled as a vegetable and, to me, are not very good.

Erythrina berteroana Urban, Symb. Antill. 5: 370. 1908.

Pito, miche, machetillos, coralillos, tzinté, tzité.

Now often a fence-row tree and also used to mark boundaries of land. Distributed from southern Mexico to the West Indies and northern South America. Widely carried by man but doubtless native in part or all of the region. Trees reported in Central American literature as E. rubrinervis HBK. may belong here. The flower buds as also the tender shoots are used as a vegetable and are seen in many markets, often far into the highlands. The seeds are poisonous and possibly halucinogenic. The Quiché people of Guatemala call the medicine men who produce "spells" with Erythrina seeds ahzites or ajzites.

Erythrina glauca Willd. Ges. Nat. Freund. Berlin Neueschrift. 3: 428. 1801.

Ahuijote, giliqueme, gualiqueme, helequeme.

A large tree with attractive orange flowers is most often found along streams, lakes or swamps. It has been used in southern Central America as a coffee shade. The flowers are folded into a batter, cooked and eaten. I have seen macaws (now becoming very rare) congregated in these trees in Honduras to eat buds and flowers. Occasionally planted as an ornamental, easily done by cuttings.

Erythrina guatemalensis Krukoff, Am. Jour. Bot. 28: 688. 1941.

Pito, tzintej.

It was reported by E. P. Dieseldorf, in his Las plantas medicinales del Departamento de Alta Verapaz (1940) that the bark, flowers and leaves are used by the local Indians to produce a hypnotic sleep, and that the seeds are used in divination by the local medicine men-magicians.

Erythrina poeppigiana (Walp.) O. F. Cook, Bull. U.S.D.A. Agri. Bot. 25: 57. 1901.

Pito extranjero.

Native of Panama southward. Introduced into Central Americas as a shade for cacao or coffee, probably little or not at all used now. The species is showy and naturalized in many places from Guatemala to Costa Rica.

Eysenhardtia adenostylis Baill. Adansonia 9: 239. 1870.
Taray.

Exported from Mexico under the name of lignum nephriticum to Europe where it has a reputation as a remedy for kidney ailments.

The wood provides a yellowish-brown dye, it is heavy, hard and reddish-brown. Probably dyes may be extracted from most deeply colored leguminous woods.

Gliricidia sepium (Jacq.) Steud. Nom. Bot. ed. 2, 1: 688. 1841.

Madre de cacao, madriado, madrial, madera negra, palo de hierro, yaité, cansim, matasarna.

Widely distributed from Mexico and the West Indies to northern South America, possibly much of this range due to distribution by man from pre-Columbian times to the present. The usual common Spanish name is assumed to have been derived from the Mexican cacahuananche by translation. The tree has been used for centuries as shade in cacao plantations, and in more recent centuries as coffee shade. It is not a good coffee shade since it is leafless during the dry season. The principal use of the small tree today is as a living fence post. Stakes pushed into the ground during the rainy season strike roots and soon provide a suitable support for barbed wire fences. The

flowers are cooked as pot herbs or folded into an egg batter and fried. Markets in Guatemala and El Salvador, in years past, always had them even though they were abundant along every fence row and were there for the taking.

The leaves, bark and seeds have been used in preparing a poison for rodents, usually mixed with a grain or fat. The wood is durable and is used in constructions and for railroad ties when large enough. Like many other plants thought to be medicinal this one has been used in diseases of the skin.

Glycine max (L.) Merrill, Interpret. Herb. Amboin. 247. 1917.

Soya, soybeans, soy.

Soy is one of the world's oldest crops and an exceedingly important one in China, Japan, and nearby in the United States. Soy is only occasionally grown in Central America although experimental plantings were made at the agricultural school at Bárcena in Guatemala years ago. These experiments indicated that there was a potential for the crop in Guatemala. Industrial and edible oils, fodder, an endless number of processed food products from the seeds make the crop a useful one. Native of southeast Asia and doubtless cultivated in China 5,000 years ago, or more. There are an endless number of varieties in cultivation.

(Glycyrrhiza glabra L. -- Licorice is not grown in Central America so far as I know. The plant is a perennial and native in Asia. Much of the crop comes from Spain. The roots are dried in sheds for some months then are ready to market. Most licorice is used in the tobacco industry, some by the confectioners and a relatively small amount in the pharmaceutical trade.)

Haematoxylon brasiletto Karst. Fl. Colomb. 2: 27, t. 114. 1862-69.

Campeche, Brazil, brasileto, palo de Brazil, espinita. In trade the wood is known as Brazil wood, Nicaragua wood, brazilette or hypernic.

The shrub is a common one in the dry hills and valleys from Mexico to Colombia and Venezuela. The heartwood pro-

vides a once important bright red dye called brasilin. Large quantities of the wood were shipped from Mexico and Central America.

Haematoxylon campechianum L. Sp. Pl. 384. 1753.

Campeche, palo de campeche, palo de tinta, tinta, ec, brasileto, logwood, blockwood. The purple-red dye is known as haematoxylon. In trade called logwood.

A small tree or shrub found in swamps and when abundant the habitat often called tintales.

Logwood and mahogany were sought by the early British settlers in what is now Belize. These two woods had a profound effect in the settlement of that once British colony and in the rest of the Yucatan peninsula. Logwood was known and used in pre-Columbian Mexico and soon after discovery became an article of export.

Logwood dye is extracted with water from the heartwood. Eventually the liquor will turn black but other colors are obtained by the use of different mordants. The dye is and was used principally for textiles but now is replaced by analine dyes. Pieces of logwood were once seen in most highland markets in Guatemala, where weaving is a way of life. I have not seen it now for many years.

Haematoxylon was used in medicine as a remedy for dysentery or diarrhea as were many other dye plants.

Hymenaea courbaril L. Sp. Pl. 1192. 1753.

Guapinol, cuapinol, copinol, palo colorado, algarrobo (incorrectly), temá, hoja de chuchillo, pacay, pac, pacoy, copal (the resin).

Becoming a very large and beautiful tree to 30 meters or more from Mexico and the West Indies through Central America to South America.

The whitish and often flour-like pulp that surrounds the seeds is sweet and is eaten. I saw this tree, specimen size, in Jardin Gillet in (then) Kisantú, in the Bas Congo of the Belgian

Congo. The blacks had learned to eat the floury aril just as it is used in Central America.

A hard resin is obtained from living trees or as a "fossil" is dug from the ground where once were trees. In trade the resin is called South American Copal or Demarara Copal. Copal is used as an incense in religious ceremonies in highland Guatemala. A considerable amount must be burned each year in front of the cathedral in Chichicastenango.

The wood is used locally in the making of wooden machinery for sugar mills, boats, furniture and cabinetry. Once exported but perhaps no longer for the tree is nowhere abundant.

INDIGOFERA. A scientific name which means "indigo bearer." Indigo was once a very important crop in Mexico, Guatemala and especially in El Salvador before the introduction of coffee. Perhaps four native species and one introduced one were involved in the production of indigo or añil. Indigo was the most important of the dye crops and used in India and the east from earliest times. Plants, at flowering time, are steeped in water for a long time under continuous stirring. The dye gradually settles out, is collected and made into small cubes or balls for the market. Small balls of indigo were still offered in the markets of Central America twenty five years ago or more (1940s and 1950s) but now are rarely seen.

Indigofera anil L. Mant. 2: 272. 1771.
Añil.

Once cultivated in Costa Rica for the dye.

Indigofera guatimalensis Mociño, Sessé & Cervantes ex Prain & Baker, Journ. Bot. 40: 67. 1902.

Described from material thought to have been Guatemalan but perhaps not. Once grown in El Salvador, and perhaps in Guatemala and the West Indies for the dye.

Indigofera suffruticosa Miller, Gard. Dict. ed. 8. 1768.

Jiquelite, añil, tinto, platanillo, platanito, platinito de tinta, tinaco, sacatinta, barbasco, jiquilite.

Grown from ancient times in Mexico and Central America as a source of a blue dye, widely distributed from Mexico, the West Indies and South America, partly no doubt by early man. Like other species it was an important crop before the introduction of coffee, a better and more profitable crop. Synthetic dyes have replaced it as well as most other natural dyes. Now often seen as a weed in fields and in disturbed areas.

Indigofera tinctoria L. Sp. Pl. 751. 1753.
Añil.

Native of India, perhaps once cultivated here or spread as a relic of cultivation. Rare in Belize and perhaps Costa Rica.

INGA is a large genus of trees or shrubs common in Central America, both native species and species carried from one part of our region to others, or brought in from elsewhere as shade in coffee plantations. Since coffee is one of the most important of our export crops good shade trees are important. Most of the species of Inga given below are used for coffee shade. The maturing pods, often very large, of most species contain a sweet aril surrounding the seeds and this is eaten. The seeds of some species are used in salads or perhaps even cooked. Pods are often offered in markets.

Ingas occur at low and middle elevations throughout our region, rarely above 2,000 meters. The wood is much used as fuel, especially in regions like El Salvador where the natural forests are gone but where coffee is a prominent crop and where Ingas thrive.

The species of Inga are difficult to distinguish and the common names are of little help since they are applied inconsistently. Guajiniquil, or variations of it, is applied to most species. The botanical names are hardly better!

Inga edulis Mart. Fl. 20, Beibl., 113. 1837.
Cuajiniquil, guama, pepetón.

Coffee shade. The sweet aril surrounding the seed is eaten by young and old. Mexico through Central America to Panama and Brazil, doubtless spread by both early and late man.

Inga fissicalyx Pittier, Contr. U. S. Nat. Herb. 18: 213. 1916.

Cuje.

An uncommon species from southern Mexico and Guatemala. Pulp in the pods is eaten. Not known as coffee shade.

Inga leptoloba Schlecht. Linnaea 12: 560. 1838.

Paterno, cuje, pepeto, pepeto negro, papete, cerel, cerelillo cuajiniquil.

A common coffee shade in Guatemala and El Salvador and doubtless elsewhere. The pods are offered in markets for the sweet pulp surrounding the seeds.

Inga micheliana Harms, Rep. Sp. Nov. 13: 525. 1915.

Cushín, chalum, chochoc.

Perhaps found in Guatemala, El Salvador, Honduras and Nicaragua as a preferred coffee shade. The leaves are used in Cobán to wrap tamales to which they impart a purple color. Honey produced from this Inga is of fine quality and some of it is exported.

Inga paterno Harms, Rep. Sp. Nov. 13: 419. 1914.

Paterno, paterna, guama.

Planted as coffee shade from southern Mexico to Costa Rica. The pulp around the seeds is eaten and often much appreciated. The immature seeds are blanched, salted and used in salads in El Salvador.

Inga rodrigueziana Pittier, Contr. U.S. Nat. Herb. 18: 209. 1916.

Shalum, cujinicuil, guamo, bribri, tamatama; the fruits in markets as cuchín, cuxín, caspirol or paterna.

Coffee and cacao shade in the Pacific slope of Guatemala, and for cacao in Izabal. Perhaps the commonest of coffee shade trees in Guatemala. Known only from southern Mexico and Guatemala.

Inga spuria Humb. & Bonpl. ex Willd. Sp. Pl. 4: 1011. 1806.
Guaniniquil, guama de río.

Common names include most of those applied to the species of Inga above.

Perhaps occasionally used as a coffee shade but not commonly so. The pulp surrounding the seeds is eaten. This is the only species of Inga that I have seen wide spread as a native tree, mostly below 1,000 meters. It occurs also in Mexico, Panama and South America.

Lathyrus latifolius L. Sp. Pl. 733. 1753.
Chorreque.

A coarse perennial pea which has been planted and escaped in many places in the western highlands of Guatemala, especially near San Marcos where it produces a profusion of blooms well into the dry season.

Lathyrus odoratus L. Sp. Pl. 732. 1753.
Chorreque, sweet pea.

Occasionally in gardens in Central America in fairly high areas with sufficient rain and humidity. It is a market crop around San Juan Sacatepequez, and flowers go to the Guatemala City market or are sold in stands along the highway.

Lens culinaris Medic. Vorles. Churpf. Phys. Ges. 2. 1787.
Lentaja, lentils.

Used as a food plant in Europe and the Mediterranean region, and much of the rest of the Old World, from prehistoric times. It is not known in historic times as a wild plant. Lentils were perhaps the best leguminous food plant of the Old World until the much superior American beans were introduced. The plant is occasionally cultivated in Guatemala but I have never seen it as a crop nor have I seen the lentil seeds in a market in another Central American country.

Leucaena leucocephala (Lam.) de Wit, Taxon 50-54. 1961.
Barba de león, guaje, wild tamarind.

It is reported by Woodeworth (Bot. Mus. Leafl. Harv. Univ. 11: 31. 1943) that horses are fed on the leaves of this plant, when there is insufficient Guinea grass and they have little else in their diet the hair of the tail and mane fall out, possibly because of some poison or dietary deficiency. When the diet changes the hair grows back. The depilatory action has been reported on horses and pigs in Africa. I saw extensive plantations in tropical Africa where it was used as a forage plant.

LONCHOCARPUS. The roots of several South American species are a source of rotenone. I do not know of this use in Central America.

Lonchocarpus guatemalensis Benth. Journ. Proc. Linn. Soc. Bot. 4: suppl. 87. 1860.

Swamp dogwood, chincho, chaperno, chaperno prieto, palo de gusano, turtle bone, dogwood.

The Maya are said to have fermented the bark, with honey, to make an alcoholic beverage. More recently sugar has replaced the honey and the beverage is still made by the Yucatan Maya as "balche."

Lonchocarpus rugosus Benth. Journ. Linn. Soc. Bot. 4: suppl. 92. 1860.

Chaperno, matabuey, arripín, canasin, black cabbage-bark, masicarán, chapulaltapa.

A black dye was once extracted in Guatemala. An abundant tree in the dry highlands from southern Mexico to Honduras.

(LUPINUS. Lupinus mutabilis Sweet, called chocho, is a common crop in the highlands of Ecuador. I saw another lupine cultivated in the highlands of Angola, Zaire and Burundi which should be grown in Mexico and Guatemala. I have seen only ornamental lupines cultivated in our area. There are several native species but none used as food.)

Lysiloma aurita (Schlecht.) Benth. London Journ. Bot. 3: 83. 1844.

Sare blanco, quebracho, sicahuite, sicagüite.

Used in El Salvador as a tan bark but said to impart an unpleasant odor to the leather.

Medicago sativa L. Sp. Pl. 778. 1753.
Alfalfa.

A forage plant native of the old world occasionally grown in Central America as a green fodder. It is an important hay crop in temperate regions of the world and is grown in many varieties.

MIMOSA. There are many species of Mimosa in Central America. A few are attractive shrubs when in flower. Most kinds are a part of the thorn scrub or more often weeds and despised plants. Some tree-like species are used as fuel but more commonly the thorn scrub is burned to get rid of it. The sensitive plants, commonly called "dormilona" when a worse name is not applied are often abundant and weedy. The genus is closely related to Acacia but with the stamens mostly 5 (or 10) in contrast to many in Acacia.

Mimosa invisa Mart. Flora 20, Beibl. 2: 121. 1837.
Rabo de iguana, zarza, zarza zonza.

Common in thickets and even oak forests below 1,500 m. from Mexico to the West Indies and South America. The plant often invades cultivated lands as a weed. In Costa Rica an infusion of the leaves is used as an emetic. The roots are irritants and may be toxic.

Mimosa tenuiflora (Willd.) Poir. in Lam. Encycl. Suppl. 1:82, 1810.
Carbón.

This is the carbón of the hot and dry valleys of Central America. It is difficult to eradicate and covers the land in dense thickets. Scrub areas are difficult to penetrate because of the spines. It finds some use as fuel and may have some value as a tan bark. The carbonales are rather attractive when the scrub is in flower. The flowers are white.

Mucuna argyrophylla Standl. Contr. U.S. Nat. Herb. 23: 504. 1922.
Ojo de venado, ojo de toro, ojo de caballo, ojo de buey.

This or related species give a permanent black dye. Combined with a scale insect and alum a black gloss used to decorate objects made from the fruits of Crescentia, is employed in Rabinal, Guatemala, by the Indians. Native from southern Mexico to El Salvador.

Mucuna pruriens (L.) DC. Prodr. 2: 405. 1825.
Pica pica, velvet beans, cow-itch, nettle.

A common herbaceous vine in the lowlands of Central America. The pods remain on the dry plants and when disturbed shed bristles which cause itching and a burning sensation. I had this happen to me in handling specimens collected by Sessé and Mociño in Mexico nearly 200 years ago.

A form with fewer bristles, velvet beans are commonly grown in the southern United States as fodder and as green manure. The seeds are used as food in India but apparently not in our region. The bristles are said to have been used in the West Indies, mixed with syrup, and administered to expel internal parasites, especially in slaves.

Mucuna sloanii Fawc. & Rendle, Journ. Bot. 55: 36. 1917.

The seeds are said to have been eaten by the coastal Caribs. A black dye comes from the leaves. The species is irritant, as are most kinds. Found from southern Mexico and the West Indies to South America. Africa.

Macuna urens (L.) DC. Prodr. 2: 405. 1825.

An irritant species found along the shore and in swamps. The seeds of this and of related species are the sea-beans carried by rivers to the ocean and commonly found along tropical shores, and occasionally carried across the Atlantic by ocean currents.

Myroxylon balsamum var. perierae (Royle) Harms, Notizbl. Bot. Gard. Berlin 5: 95. 1908.

Bálsamo, palo de bálsamo, nabá, bálsamo de Perú, bálsamo de El Salvador, bálsamo de Matagalpa, chirraca. The balsam of Central America is in trade as balsam of Peru. It was perhaps first transhiped from Peru to Europe and hence received an erroneous name that has persisted for centuries. In 1960 a

shipment of 5 drums from the port of La Libertad (El Salvador) was reported as Tolú balsam, incorrectly.

Native from Vera Cruz and Oaxaca, Mexico, through Central America to Panama. Found on both coasts usually below 300 meters but more abundant along the coast of the Pacific from Guatemala to Panama. Most abundant in El Salvador but the forests with the trees are being decimated. Cultivated now in tropical and subtropical countries, - I saw it in Zaire.

The balsam is a dark brown, viscous liquid obtained by tapping the trees and catching the liquid in old cloth or by pulling the dried balsam from the trunks of the trees. It is extracted in water and stored in drums for shipment.

Balsam is used in medicine (now rarely) and as a fixative in perfumes. It is probably an ingredient in incense in Guatemala. Used since ancient times in America, it is said to have been an article of commerce in pre-conquest Mexico, and an article of tribute to the Aztec emperors.

Pachyrrhizus erosus (L.) Urban, Symb. Antill. 4: 311. 1905.

Jícama, jícamo, raíz de jícama, frijol papa, yam bean, yam bean root.

Cultivated either as a horticultural crop or sometimes as a field crop and either native or an escape from cultivation in many places. The white-fleshed roots become large and contain a high proportion of water, they are sometimes sweet and are used as a source of water. The roots and sometimes the seeds are cooked and eaten. Thought to be unwholesome by some and nursing women are warned that damage to the child may result from eating the root. The roots of "wild" plants are considered poisonous in some regions. Commonly offered in markets in El Salvador and occasionally in other markets from Guatemala to Costa Rica.

A form of yam beans with lobate instead of entire or serrate leaflets occurs in Central America. It is P. erosus var. palmatilobus (DC.) Clausen.

Peltogyne purpurea Pittier, in Journ. Wash. Acad. Sci. 5: 417. 1915.

Nazareno, morado, purple heart. Panama, in the lumber trade.

A very attractive, hard and durable wood which is purplish in color. It is used in applications where a very hard wood is required. The species is Costa Rican although the name Panama is used in the lumber trade.

PHASEOLUS. The various kinds of beans coming from the genus Phaseolus were very important in pre-Columbian times as they now are here and around the world. Civilizations have developed in the world where there were food plants available from which a balanced diet could be obtained. In the Americas this balanced diet was derived from beans and maize, most especially the common bean, Phaseolus vulgaris. Common or field beans occur in literally thousands of horticultural varieties in Mexico and Central America. It has been estimated that between 200,000-250,000 hectares of land are devoted to the cultivation of common beans in our region. The annual production of dry beans in Central America is estimated to be some 114,000 long tons. These beans are mostly all consumed within Central America and very often there are shortages and high prices.

Beans and maize are and have been the basic foods for countless millions of men, perhaps a thousand or more generations, in Mexico and Central America. Sufficiency or hunger to the ever increasing populations depends on the abundance or scarcity of these two prime crops. While productivity of both these crops has increased in recent years, due to intensive research, the actual output of food may be decreasing as soil fertility decreases and as more of the soil is flooded into the seas every year.

Phascolus acutifolius Gray, Pl. Wright. 1: 43. 1852.
Frijol de Colima, ixcomita, ixcumite, Tepary bean.

Cultivated occasionally along the Pacific plain of Guatemala, the beans sometimes offered in markets in Guatemala. Native from Arizona, New Mexico to Mexico.

(Phaseolus aureus Roxb.- The mung bean is the bean from which bean sprouts used in Chinese cookery come. I have not seen the plant cultivated in our region but the Chinese import the beans for their own use. It is to be expected that the bean has been grown here.)

Phaseolus calcaratus Roxb. Hort. Beng. 54. 1814.
Frijol de arroz, rice bean.

Occasionally grown in Costa Rica where I found it offered in the San José market. It is also sometimes grown in Guatemala but I never saw it in a market there. Native of India and found through the tropics from Ceylon to the Himalayas. The seeds may either be red (Costa Rica) or tan with a long white hilum and are shaped somewhat like grains of rice, hence the common name.

Phaseolus coccineus L. Sp. Pl. 724. 1753. P. multiflorus Willd. Sp. Pl. 3: 1030. 1799, a synonym much used in botanical literature.

Pyloy, pilol, cubá amarilla, cubá blanca, cubaces, chilipuca, cuarentenos, ixtapacal, frijol chamborate, chamborote, frijol num, lool, lol, ixcumite, nima kinac, scarlet runner bean. Doubtless many other names in Guatemalan dialects.

I have seen this bean in situations in several Central American countries where I thought it to be native but since it has been cultivated and carried about by man for centuries no one can be sure. Scarlet runner beans are commonly cultivated in all the highland regions of Central America. They are found in all markets of Guatemala and Costa Rica in season as shell beans or green beans. The recently shelled beans are colorful and very good. I saw these American beans grown in an unlikely area on the border of Zaire and the Sudan, by negroes as a subsistence crop.

Biochemical analyses of Guatemalan and Costa Rican collections will be found in Munsell, Williams, et al., Food Technology 14: 16, 22. 1950.

Sometimes grown as an ornamental, for the attractive red flowers.

(Phaseolus limensis Macf. This name is often used for the form of the lima bean with large seeds. Bailey in his Manual of Cultivated Plants, 574. 1949, uses this name and the common name "lima bean." The smaller seeded kinds are called P. lunatus and the common name given as "seiva bean." I use the name Phaseolus lunatus for all these kinds of beans.)

Phaseoulus lunatus L. Sp. Pl. 724. 1753.

Frijol de luna, frijol de mantequilla, frijol de media luna, pileu, piloy, ixtapacal, ixpanque, frijol de monte, jurón de venado, frijol ixtagapa, chilipucas, lima bean, seiva bean, butter bean, bush bean.

Some of these common names duplicate those of P. coccineus indicating that there is confusion of the two by native peoples. Some are nothing more than translations of English names. The lack of a long list of indigenous names from Guatemala either indicates a little used plant or one not appreciated.

A wild bean presumed to have been the one from which the cultivated lima was derived is common in the dry lowlands of Central America at 1,000 meters or less, and gives all indications of being a native plant. However this plant never impressed me as being one from which the cultivated lima could have been derived. The seeds of the native plants are small, nearly round and brown. The native people consider the beans to be poisonous and perhaps they do contain hydrocyanic acid.

The cultivated limas of our region are all or mostly the scandent climbing type, bush beans are rarely seen. The lima doubtless originated in tropical America but among a large number of other kinds of beans it is little appreciated. I have never seen limas offered in a market.

Phaseolus spectabilis Standl. Contr. U.S. Nat. Herb. 17: 430, t. 25. 1914.
Chorreque.

Native in Guatemala and Honduras. The flowers are sometimes added to tamales or other dishes in Huehuetenango.

Phaseolus vulgaris L. Sp. Pl. 723. 1753.
Frijol, common bean, field bean, kidney bean.

Spanish: the name frijol is generic but when used alone it often means the red field bean. Frijol, frijol colorado, frijol negro, frijol blanco, frijol del país (merely means local), frijol dulce, frijol bayo, frijol bayo canario, frijol guaria, frijol Jamaica, frijol higuerillo, frijol chimbolo, frijol chileno, frijol bainico, frijol norteño, frijol negro corriente, frijol kuibra, frijol portuto, frijol portugués, pisque, frijol parranda, frijol sangre de Cristo, frijol rojo, frijol tineco roco. A great many more, especially in Costa Rica.

Spanish for green or snap beans: ejotes, frijol tierno, frijolito tierno, frijol de mantequilla, bainica de mantequilla, bainica verde.

Indian dialects (Mayan) in Guatemala, collected by Standley, and there are doubtless many more: chicong, chicun, ubal, cuyenc, xenc, pilín, ch'ux, quenc, tut, chenec, et, quinac, quina'c, kin'ac, ccap (snap bean), quencc, chicul, hubal, gupal, hupal, chicun.

Native of Central America and widely distributed in pre-Columbian times. A plant which is a wild progenitor was found by Antonio Molina and myself in Honduras. Before we could describe it specimens were distributed and an Argentine botanist described it.

One of the best food plants of American origin and certainly in cultivation from very early times. Carried by early man north to the United States and south to Peru or beyond.

Beans have a high percentage of protein and that along with the carbohydrates from maize produced a balanced diet that made the Mexican, Central American and Andean South American advanced civilizations possible.

Beans, of course, are usually grown as a seed crop. The seeds when mature may be stored for long periods of time, to be used as needed. There are perhaps many thousands of named varieties and these fairly consistent since the plants are self pollinated.

Many varieties of beans were collected from many sources by us in Central America and biochemical analyses were made.

These analyses, about 40 of them, are reported in Munsell, Williams et al. in Food Technology, volume 14, pages 3, 4, 9, 13, 16, 22 and 446, 1950; volume 15, page 15, 1950.

The voucher specimens for these biochemical determinations are in the herbarium of Escuela Agrícola Panamericana in Honduras.

Piscidia grandifolia (Donn.-Sm.) I. M. Johnston, Contr. Gray Herb. 70: 71. 1924.

Palo de zope, palo de zopilote, llorasangre.

Native from southern Mexico to Honduras. The bark is said to be used in Guatemala as a fish poison. The tree has been used about Antigua for a coffee shade and is still abundant there. Used for fuel in El Salvador.

Piscidia piscipula (L.) Sarg. Gard. & For. 4: 436. 1891.
Habin, dogwood, maybush.

The dry bark, especially that of the root, is reported to have a disagreeable odor like that of opium and to cause a burning sensation in the mouth. It has been used as a toothache remedy, perhaps as a counterirritant, and is thought to contain narcotic substances. The bark and crushed leaves thrown into a pool or river stupify fish. The specific name refers to the poisonous properties of the genus. Native from southern Florida and Mexico, the West Indies, Belize, Guatemala, Honduras to northern South America at or little above sea level.

Pisum sativum L. Sp. Pl. 727. 1753.
Alberjas, petit pois, petipoa, peas.

Peas are grown in many places in Central America, mostly at 2,000 meters or above and are found in the markets in Guatemala, El Salvador and Costa Rica either in the pods or shelled. Peas are never abundant and usually are expensive. I have never seen peas of good quality offered in any market perhaps due to harvesting too late and to varieties grown.

PITHECELLOBIUM. The generic name was first written as Pithecellobium by Martius, and has been conserved. Variant spellings commonly found are Pithecolbium and Pithecollobium

It is a large genus of some 200 species or more distributed in both hemispheres, with about 40 species in Central America. The honey made from several species is said to be good.

Pithecellobium albicans (Kunth) Benth. Trans. Linn. Soc. 30: 592. 1875.

Found in Mexico and Belize. The wood is used in constructions and the bark for tanning leather and making a black dye.

Pithecellobium austrinum Standl. & L. Wms. Ceiba 3: 114. 1952.

Algarroba, tamarindo.

The tree has been used in reforestation projects in the Golfo Dulce region of Costa Rica.

Pithecellobium dulce (Roxb.) Benth. Lond. Jour. Bot. 3: 199. 1844.

Madre de flecha, jaguay, mangollano, mangollana, mangollano blanco, espino, guachimol, guayacán blanco.

The bark is used for a tanning material and as a yellow dye. A reddish-brown but transparent gum exudes from the stem and this, mixed with water, makes a satisfactory mucilage. The aril around the black seeds is eaten. Naturalized in the old world and first described from there. Native or spontaneous from Mexico to northern South America.

Pithecellobium lanceolatum (Humb. & Bonpl.) Benth. Lond. Jour. Bot. 5: 105. 1846.

Guachimol, guachimol bat.

The aril surrounding the seed is edible. Mexico to northern South America.

Pithecellobium pachypus Pittier, Contr. U.S. Nat. Herb. 20: 457. 1922.

Tucuy, guachimol, nacascolo.

The pods were used formerly in the making of ink. Known from Belize, El Salvador and Nicaragua.

Pithecellobium saman (Jacq.) Benth. Lond. Journ. Bot. 3: 216. 1844.

Cenícero, raintree, carreto, zorra.

Cross sections of large trunks have been used to make cart wheels. Native from Mexico to South America. Introduced in India where the dark gum, hardly soluable in water, is collected.

Pithecellobium tonduzii (Britt. & Rose) Standl. Field Mus. Bot. 4: 308. 1929.

Guanacaste, utzche.

Native of Guatemala where the bark is said to be used to tan leather.

Platymiscium dimorphandrum Donn.-Sm. Bot. Gaz. 37: 208. 1904.

Palo hormigo, hormiguero, cachimbo, palo de marimba, marimbano, granadillo.

Guatemala and Honduras. Used in furniture and cabinetry. Important as a lumber tree and as the source of wood for marimba keys in Guatemala.

Platymiscium pinnatum (Jacq.) Dugand, Contrib. Hist. Nat. Colomb. No. I, II, 1938.

Panama rosewood.

Logs have been exported for use in making veneers, knife handles and articles of turnery. Native of northern South America and presumed to be along the Atlantic coast of Central America.

Prioria copaifera Griseb. Fl. Brit. W. Ind. 215. 1864.

Camíbar, cativo, bálsamo de copaiba, copaiba balsam.

A resin, known in trade as copaiba balsam, is extracted for use in medicines.

Prosopis juliflora (Sw.) DC. Prodr. 2: 447. 1825.

Algarrobo, nacascol, nacascolote, carbón, algarroba, mezquite.

The source of gum similar to gum arabic. The pods are a source of food and fodder. In dry regions the roots are a source of fuel. Doubtless widely distributed by man and foraging animals and now found from the dry southwestern United States through Mexico and the West Indies to South America.

Pterocarpus officinalis Jacq. Stirp. Am. 283, t. 183, f. 92. 1763.

Sangre de drago, dragon's blood, sangreado, kaway, swamp kaway, sange, cowee.

The blood-red sap soon hardens in the air to a red resin formerly exported as dragon's blood for use in medicine. Belize, the West Indies, Central America to northern South America.

Rhynchosia precatorius (H. & B.) DC. Prod. 2: 385. 1825. R. pyramidalis (Lam.) Urban, Repert. Sp. Nov. 15: 318. 1918.

Ojo de cangrejo, pitillo, huevos de casampulga, frijol casampulga.

The seeds, scarlet and black, are used in making necklaces and bracelets. In El Salvador the stems and leaves are used in washing clothes. In the West Indies, Cuba, Haití and the Dominican Republic in 1957-58 pieces of the stem were touted as an aphrodisiac. Small pieces were advertised for sale from the Dominican Republic at fantastic prices. These bits of stem were supposed to be soaked in rum and that taken,- or taken in almost any manner. It probably did not improve the flavor of the rum! Native over a wide area from Mexico to the West Indies and on to northern South America.

Schizolobium parahybum (Vell.) Blake, Contr. U. S. Nat. Herb. 20: 240. 1919.

Plumillo, plumajillo, quam, zorra, chapulaltapa, tambor, judío, gavilán.

A fast growing tree found from Mexico to northern South America that has been suggested as a source of paper pulp.

Spartium junceum L. Sp. Pl. 708. 1753.
Retama, Spanish broom.

Introduced and grown in Guatemala for the tough fiber in branches. Used in France and Spain to make twine, rope and coarse cloth. Naturalized in the Andes.

(Stizolobium deeringianum Bort.--Velvet beans. Doubtless grown in Central America for foder and for the edible seeds. See also Mucuma.)

Sweetia panamensis Benth. Jour. Linn. Soc. 8: 263. 1865.
Carboncillo, cáscara amarga, chichipate, quina silvestre.

The bark is said to be bitter and used in the treatment of malaria (most bitter barks have been tried sooner or later as a remedy for malaria) and syphilis. The wood is durable and has been used for cross-ties and in places where a strong wood is desired. Mexico to Panama.

TAMARINDUS. Probably native of southern Asia or tropical Africa and used from native or spontaneous trees or cultivated ones since ancient times. Grown around the world in tropical or subtropical regions for the indehiscent brown pods with brittle shells that are 7-25 cm. long. The dark brown pulp, when mature, has the consistency of ripe dates and contains about 12 percent of tartaric acid and some 30 percent of sugar. A syrup from which a refreshing and flavorful drink may be made often is found in good Italian groceries in the States.

Tamarindus indica L. Sp. Pl. 34. 1753.
Tamarindo, tamarind.

A large attractive tree to 25 meters, found mostly below 1,200 meters. The dry pods are to be found in almost all markets in Central America. The acidulous pulp is used in making a refreshing drink or is eaten out of hand or in candies. Pods offered in markets may be infested by small beetles.

TEPHROSIA. It is possible that most of the species of this genus, of which there are about 10 in Central America, may be or have been used as fish poisons. An African species, Tephrosia vogelii, provides a biodegradable insecticide and is now grown for this purpose in the United States.

Tephrosia multiflora Rose in Contrib. U. S. Nat. Herb. 1:320. 1895.
Chilapate, barbasco.

Native from Mexico to Panama and used as a barbasco. T. heydeana (Rydb.) Standl. is a synonym used in our literature.

Tephrosia toxicaria Pers. Syn. Pl. 2: 328. 1807.
Barbasco.

The species has been used in southern Central America (and Mexico) as a barbasco.

(Tephrosia vogelii Hook. f. — Grown in the United States for the production of an insecticide. It might well prove to be a useful crop in our region. The plant is widely distributed and no doubt also native in the high mountains of eastern Zaire. It was used there even as a coffee shade but more commonly to control erosion. The plants were not grown there as a rotenone crop. The pygmies of the Ituri forest semicultivated the plant as a barbasco and possibly also used it in their dart poisons. I spent some months in Zaire (then Belgian Congo) collecting genetic material of this Tephrosia.)

(Trifolium. Two old world clovers, Trifolium pratense L., the red clover and T. repens L., the white clover have been seen in Guatemala. The second has become naturalized on the volcanoes of Costa Rica. Both are good pasture plants.)

Vicia faba L. Sp. Pl. 757. 1753.
Haba, cuarenteno, horse bean, broad bean.

Native of Asia and commonly grown in Guatemala and occasionally in Costa Rica. The large seeds are an important food and are seen in most markets in Guatemala. It was the common food bean in Europe before the time of Columbus. The seeds are roasted and eaten in Indian areas of western Guatemala. They are a peril to the teeth! No wonder that Europeans and Africans took so readily to American beans once they were introduced. Grown in the highlands of Guatemala as a main crop but often interplanted with maize. Used also as a forage crop and as a green manure.

Vigna sesquipedalis (L.) Fruwirth, Anbau Huelsenfr. 254. 1898.
Frijolito, frijol de rienda, asparagus bean, yard-long bean.

Native of Asia, little grown in Central America and then for the green bean or as a forage plant.

Vigna unguiculata (L.) Walp. Repert. Bot. 1: 779. 1842.

Campí, frijol de vaca, frijol de ojo negro, frijol revisa, frijol de maíz, frijol de chícharo, frijol de vara, vainica, ejote de vara, cowpea.

Grown for the beans, for green beans, for forage and for green manure. The beans, sometimes imported from the United States, are occasional in markets. The abundance of common names for our area would indicate greater use than is the case. Native of tropical Asia.

LILIACEAE

Perennial herbs, or occasionally woody, from rhizomes, bulbs, tubers or corms, stemless or caulescent, sometimes vines; leaves alternate on stems, or basal and whorled; flowers perfect or if unisexual the plants dioecious, actinomorphic or slightly zygomorphic, the perianth usually of tepals (i.e. sepals and petals similar) in 2 series of 3 segments; stamens usually 6; pistil one and the ovary usually trilocular, superior or rarely partially inferior; fruit a capsule or a berry.

A large family with some 250 genera and perhaps as many as 4,000 species. The family is abundant in temperate and subtropical regions of the world, less common in the tropics. The number of useful plants found in the family in Central America is relatively few and none, except the onions, is of outstanding importance. — Allium and Phormium are sometimes placed in the Amarillidaceae; Smilax in the Smilacaceae; Agave, Phormium and Sansevieria sometimes placed in the Agavaceae, but I retain them in the traditional family for this work.

Allium ascalonicum L. Amoen. Acad. 4: 454. 1756.
Cebolla, shallot.

The shallot is assumed to be Asian but actually may have originated in cultivation from Allium cepa. It is rarely grown in Central America. The leaves are terete, hollow and very slender, the bulbs are made up of bulblets that cohere at the base. The

bulbs are commonly used for pickling. I have seen the crop only in Honduras. A biochemical analysis indicates that shallots are poorer, as food, than most other types of onions.

Allium cepa L. Sp. Pl. 300. 1753.

Cebolla, cebolla luciana, cebolla morada, ceboll, sipoix, cucut, onion.

Onions are native of western Asia or of the Mediterranean region and have been in cultivation long before historical times. In Central America onions are the essential ingredient in many dishes and are found everywhere and in every market. Until very recently the onions grown in much of Central America were of poor quality and at times scarce and expensive. Since about 1960 good onions have been introduced and the market prices have decreased although usually higher than in temperate regions. Dry onions were once commonly imported from the United States and were rather expensive.

Small green onions are grown around Lake Atitlán and at Aguacatán in Guatemala. In times past these were transported on men's backs and distributed through the country by these traders. Now most are carried on the tops of passenger buses and the traders ride inside. Onions do not do as well in the tropics, even in the highlands, as they do in temperate regions but in favorable places they are a profitable crop.

The multiplier onion (Allium cepa var. multiplicans Bailey) was seen in Honduras and in Guatemala, where they were doing quite well.

Allium porrum L. Sp. Pl. 295. 1753.
Puerro, leeks.

Leeks are thought to have originated in cultivation, possibly from Allium ampeloprasum L. of Europe and Asia. Leeks are not much appreciated in our region and are not commonly in markets. We have not seen them nor do we have a record of them from El Salvador or from Nicaragua. Excellent ones have been seen in other countries. We grew them successfully at 800 meters in Honduras but they do better at 2,500 meters near Quezaltenango.

Allium sativum L. Sp. Pl. 296. 1753.
Ajo, cucut, acuc, axú, haux, anx, garlic.

Native of Europe and in cultivation since ancient times. Grown in many places in Central America and to be found in most markets but often imported from Europe or the United States.

Garlic is used in many dishes by Central American cooks and often is considered to be the essential condiment, if not ingredient, in many dishes. Garlic is sometimes used to excess by people of Iberian extraction, at least to the taste of non-Iberians. The crop grows well in the Central American highlands and, like onions, were once carried far on the backs of traders.

Allium schoenoprasum L. Sp. Pl. 301. 1753.
Cebollino, chives.

Chives are native of Europe. They are rare in Guatemala and may be occasionally grown in other parts of Central America. The slender grass-like leaves are used as a condiment in salads, soups and occasionally in stews. I have not seen chives in any market in our region.

Aloe barbadensis Miller, Gard. Dict. ed. 8. 1768.
Acíbar, sávila, áloe, aloe.

Aloes were introduced into Central America at an early date, possibly from Spain. The plant is common in much of the Mediterranean region and possibly native there. It is an escape and naturalized in many places in Central America.

The dried juice from the leaves contains the drug aloes, which is used as a purgative in colon constipation, and in home remedies as a bitter. So far as I know the plant is not grown as a crop in our area.

Asparagus officinalis L. Sp. Pl. 313. 1753.
Espárrago, asparagus.

Asparagus, native from Europe to central Asia, does not do well. With reasonable care asparagus can be grown at 800 meters and higher but the stems are usually slender and rather

tough. Canned asparagus is commonly imported, especially the blanched kind, and served as a "boca" or in salads.

Lilium longiflorum Thunb. Trans. Linn. Soc. 2: 333. 1794.
Azucena, lirio, white trumpet lily.

The white trumpet lily, native of Japan, is to be found cultivated at middle or higher elevations in many places. It is much used to decorate churches and, on All Souls Day to decorate graves. In Costa Rica it is commonly used in funeral wreaths.

Phormium tenax Forst. Char. Gen. 48. 1776.
Lirio de espada, New Zealand flax.

Reported growing as an ornamental in Guatemala. It is native of New Zealand where once it was the source of a strong fiber but because of high labor costs it is little grown now. The fiber is soft and flexible and has been used to make ropes and twine, sacking and occasionally other textiles. The plant grows in wet swampy areas and needs little attention until it is ready to harvest.

Sansevieria thrysiflora Thunb. Prodr. Pl. Cap. 65. 1772-5.

Espada de Judas, espada del diablo, lengua de suegra, curarina, oreja de burro, quina, Bowstring hemp, mother-in-law's tongue.

Commonly cultivated as an ornamental and occasionally escaped. The fiber from the leaves is used to make marine cordage, ropes, strings, burlaps and other textiles. No commercial plantations are known in Central America. Native of southern Africa.

Schoenocaulon officinalis (Schlecht. & Cham.) Gray ex Benth. Pl. Hartw. 29. 1839. Sabadilla officinalis Standl. in Standl. & Calderón, Lista Prelim. Pl. El Salv. 49. 1925.

Cebadilla, ceballajo, chaguitera, boom, Indian barley.

The seeds of cebadilla contain veratridine and other alkaloids. These alkaloides have violent emetic-cathartic properties and may cause death. The principal use of the seeds

has been the preparation of a liquid or ointment for external use as a parasiticide for lice and other vermin. During the first world war large quantities were imported into Germany for use by the army to control lice. A promising insecticide for agricultural use has been made from the seeds but not widely used because of the small annual crop. The crop is entirely from wild plants and comes mostly from Venezuela. The species is native from Mexico and Central America to northern South America. In Central America the plant is widely distributed in the highlands but abundant no where. I have no record of the seeds being collected for market here. Collecting the seeds is not difficult and the seed is separated from the spikes by flailing. However the dust from flailing is said to irritate the nose and to cause nasal hemorrhages. Most attempts to grow the plant as a crop have been unsuccessful.

Smilax aristolochiaefolia Miller, Gard. Dict. ed. 8. 1768.
Cocomeca, escoca, zarzaparilla, zarza, sarsaparilla.

This species is one of those from which the drug sarsaparilla may come and may be one of the sources in Central America.

Smilax regelii Killip & Morton, Carnegie Inst. Wash. Publ. 461: 272. 1936.
Zarza, zarzaparilla, bejuco de corona, sarsaparilla.

This may be one of the principal sources of sarsaparilla and is thought to be the one most collected in Honduras and Belize. Sarsaparilla is a bitter principal obtained from the dried roots of this and several other species of Smilax. It is used principally as a flavoring material, often in soft drinks.

Smilax spp. -- There are several other species of Smilax used in Central America. One erroneously called S. lanceolata L. (a synonym of L. laurifolia L. of the eastern United States) has stout and flexible stems which are used for weaving baskets and consequently has the common name of bejuco de canasta. The yam-like roots of Smilax mollis Humb. & Bonpl. are said to be used in Honduras as a fish poison. During several years residence in Honduras I do not recall of seeing or hearing about the roots of Smilax being harvested.

Yucca elephantipes Regel, Gartenflora 8: 35. 1859.

Izote, ítabo, yucca, flor de ítabo, flor de izote, isote, palmeta, cogollo de izote, culil, co'quil, pasquil, pasqui.

Thought to be native of Mexico and widely distributed into Central America before the time of conquest. The plant is a useful one and is found in much of Central America above 800 meters, but occasionally lower. The plants are usually 3-4 meters tall, rarely up to 10 meters, much branched and quite attractive. The name izote is of Aztec origin while ítabo is used in Costa Rica and is thought to be of Indian origin there.

The leaves contain a strong fiber that is used in place of twine and is said to have been used by the Indians in weaving special textiles. Extraction of the fiber on a commercial basis and weaving from it is probably rare now. The large inflorescences of white flowers are much sought after as a food in some regions, especially in Guatemala, El Salvador and Costa Rica. The flowers are prepared by being enfolded in an egg batter and fried. The bitter anthers and ovaries are usually removed. The flowers may be added to salads, stews and to other mixed dishes. The tender growing points of the stems, cogollo de izote, from which the leaves have been stripped, are used for food, at least in El Salvador. The flowers are rather rich in ascorbic acid and niacin, consequently of value in the diet. The plant is widely used in erosion control, especially in coffee plantations.

LINACEAE

Herbs with alternate, simple leaves (ours); flowers perfect and actinomorphic; inflorescence a cyme or sometimes a raceme; flowers 5-merous; the calyx with 5 somewhat connate lobes; petals 5, contorted in the bud, fugaceous, clawed; stamens 5; ovary superior, 5-locular; fruit a capsule with persistent calyx.

A small family of about ten genera and 200 species, only one cultivated species in our region.

Linum usitatissimum L. Sp. Pl. 277. 1753.
Lino, linaza, flax.

Flax is rarely grown in Central America. A field of a few acres was seen near Tecpán in Guatemala. The plant produces a very excellent fiber for textiles and from the seed comes

linseed oil. Flax has been in cultivation for thousands of years in the Old World.

LOASACEAE

Weak or sprawling herbs often covered with stinging hairs; leaves opposite or alternate; flowers large and very showy, or small; perianth 5-merous; petals 5 with 5 alternating scales; stamens many, in fascicles opposite the petals; fruit a capsule, 3-valvate at the apex.—Attention is called to our species because of the pain which they may cause when touched.

A small family of some 15 genera and 250 species, all but one genus American with 5 genera in Central America.

Gronovia scandens L. Sp. Pl. 202. 1753.

Güisquilillo, pan caliente, pica pica, chichicaste, Juan caliente, no me tientes, pringamoza, pringamosca.

The plant is not a useful one but attention is called to it because of the stinging hairs which can cause severe pain on contact. This is a vine with the appearance of a cucurbit. Distributed from Mexico to Ecuador.

Loasa speciosa Donn.—Sm. Bot. Gaz. 23: 8. 1897.
Campana, ortiga veinticuatro.

A beautiful and conspicuous plant due to large and brightly colored flowers, but one to be avoided because of the savagely stinging hairs. The name veinticuatro (24) refers to the duration of the pain from the stinging hairs of this plant. A Costa Rican field companion once collected this plant and immediately was in great pain from it. Known only from Costa Rica.

Loasa triphylla var. rudis (Benth.) Urban & Gilg, Nova Acta Leop. Acad. 86: 239. 1900.
Ortiga, pringamoza, pringa mosca, chichicaste.

Like the preceeding plant it is not a useful one but because they may cause intense pain on contact they are included. Abundant in many places in wet thickets and along streams

from southern Mexico, Guatemala, Costa Rica and Panama. A similar one is common in western South America.

LOGANIACEAE

Herbs, shrubs or trees, leaves opposite or rarely verticillate, simple, connected by a transverse line or stipular sheath; flowers regular, perfect, bracteate; calyx 4-5-parted, the lobes usually short, imbricated; corolla sympetalous, lobes valvate, imbricate or contorted; stamens as many as the corolla lobes and alternate with them; ovary superior or somewhat inferior; fruit a capsule, sometimes baccate or drupaceous.

A family of some 32 genera, eight of them in Central America, and about 800 species. Several are drug plants and a number are ornamentals.

Buddleia americana L. Sp. Pl. 112. 1753.

Salvia santa, sactzam hoja blanca, árnica, salvia, salvia sija, salviona.

The dried and pulverized leaves are added to tobacco, used to make cigarettes, and give it a distinctive flavor. The plant is abundant in all of Central America, often as a weed.

Spigelia anthelmia L. Sp. Pl. 149. 1753.

A common annual occuring from southern Florida, Mexico and the West Indies south to Brazil. Naturalized in Africa and Indonesia.

The roots have been used in our region to prepare a remedy for tapeworms and other intestinal parasites. Care must be taken in the use of the roots since excessive doses are said to cause vomiting, convulsions and even death. I have recorded no common names but these must exist.

(STRYCHNOS. Several species occur from Guatemala to Costa Rica. Strychnos toxifera Benth. which may be in Costa Rica, is presumed to be one of the sources of curare in South America and is reputed to provide one of the deadliest of poisons. The Old World S. nux-vomica produces two important alkaloides, strychnine and brucine, which are used in medicine and for other purposes. Strychnine is a virulent poison.)