CHLORANTHACEAE

Weak shrubs or trees (ours) growing in the wet or moist mountain forests; leaves opposite, simple, fleshy, petioles more or less connate at the base. A small tropical family of 3 genera and some 50 species. Only the following genus in America.

Hedyosmum mexicanum Cordemoy, Adansonia 3: 307. 1862-63.

Palo de agua, té azteco, té Maya, té de monte, mazorco, macetero, vara blanca, sandio, onj, onc.

The fruits when mature are whitish, succulent, sweet and edible. Standley reports that a substitute for coffee is made by placing two or three leaves in a cup of hot water.

COMBRETACEAE

Trees or shrubs or sometimes vines with simple opposite leaves; flowers mostly small, in racemes or spikes, perfect or sometimes dioecious. A family of about 15 genera and perhaps 500 species, mostly all in the tropics. Most important economically for tannins and dyes produced by several species.

Bucida buceras L. Syst. ed. 10. 1025. 1759.
Cacho de toro, pucte, pocte, bullet tree, bully tree.

The bark is reported to be used as a tanning material in Honduras. The hard tough wood is used where strength and durability are important.

Conocarpus erecta L. Sp. Pl. 176. 1753.

Mangle negro, mangle torcido, mangle piñuelo, mariquito, zaragosa, botoncillo, buttonbush, button mangrove, buttonwood.

The bark is reported to contain 16-18 percent of tannins but probably is little exploited in our area. The wood is a favored fuel in Belize. Widely distributed near the sea in tropical America and a usual element of the mangrove swamps.

Laguncularia racemosa (L.) Gaertn. Fruct. 3: 209, t. 217. 1805. Mangle, mangle blanco, mangle chaparro, palo de sal, sinchuite, cincahuite, white mangrove.

The leaves contain 10-20 percent of tannin and the bark 15-18 percent. The leaves have been much used for tanning leather in South America. Widely distributed along the sea in tropical America.

Terminalia amazonia (J. F. Gmel.) Exell in Pulle, Fl. Surinam 3: 173. 1935.

Almendra, guayabo, membrillo, naranjo, nargusta, canxún, canxán, quebrado, sisín.

One of the largest trees along the Atlantic slope of Mexico and Central America and to Brazil and Peru. The tree reaches to 40 meters or possibly more. The wood is moderately heavy and is used in railroad ties and in general construction but is said to be not very durable. The names guayabo and membrillo refer to the fact that the bark is much like that of the common guava (Psidium).

Terminalia catappa L. Mant. Pl. 128. 1767.
Almendro, tropical almond, Indian almond.

Native of tropical Asia. Planted as a shade tree in the lowlands of most of our area. The tree tolerates saline soils and endures neglect. The almond-like seeds are eaten by small boys and sometimes by not so small boys. The bark and fruits are rich in tannins and yield a black dye used in India, and it was used in El Salvador to dye textiles.

Terminalia chebula Retz. Obs. Bot. 5:31. 1780. - To the best of my knowledge this plant, from which the important tanning material myrobalans comes, has not been introduced into Central America. The fruits, with seeds removed, contain 40-50 percent of tannin. Myrobalans is commonly used in India and large quantities are exported. The tannin produces a quality leather, much needed in Central America where good leathers are the exception rather than the rule.

Terminalia oblonga (R. & P.) Steud. Nomen. Bot. 2: 668. 1841.
Volador, guayabo.

A large tree, to 45 meters, mostly along the Pacific lowlands from Guatemala to Panama, south to Brazil. Probably has the same uses as T. amazonia and often confused with it.

COMPOSITAE

Annual or perennial herbs, shrubs or trees, sometimes scandent vines; the flowers collected into a head (the head rarely 1-flowered) on a receptacle, surrounded by an involucre of phyllaries (involucral bracts); corolla gamopetalous, regular, tubular and 5-dentate or bilabiate or ligulate; ovary inferior; fruit an achene often bearing a terminal pappus of bristles, awns or scales.

A large family of some 900 genera and 20,000 species found in most regions of the world but most abundant in temperate zones. Considering the size of the family the number of important useful plants is few.

Baltimora recta L. Mant. 288. 1771.
Flor amarilla, Baltimora.

One of the worst weeds in cultivated fields from sea level to 2,000 meters or more, difficult to control. The heads contain few rather large seeds which are much sought after by resident and migrating birds. The seeds should be examined as a possible source of edible oil.

BIDENS Spp. — Mozote, mozotillo, beggar's ticks. — There are several species of Bidens which are pernicious weeds in cultivated fields. The achenes have barbate awns and adhere tenaciously to clothing. — See Thomas E. Melchert, Fieldiana, Bot. 24, pt. 12: 193-214. 1976 for a recent and useful account of this weedy genus in Guatemala.

Carthamus tinctorius L. Sp. Pl. 380. 1753.
Alazor (Spain), asafrán bastardo (Cuba), safflower.

Safflower is not recorded as being grown in our area, however the plant produces one of the finest cooking oils and should be experimented with in our region. Safflower is of relatively recent importance as an edible oil crop but the acreage devoted to it in the United States is increasing as demand for

the oil increases. Safflower has been grown since ancient times for the yellow dye which may be extracted from the flowers. The dye now is of little importance.

Chrysanthemum cinariaefolium (Trev.) Vis. Fl. Dalmat. 2: 88, t. 8. 1847.
Flit (Guatemala), piretro, pyrethrum.

Pyrethrum has been grown in the highlands of Guatemala as a source of an insecticide. The insecticide prepared from the plant is toxic to a wide range of insects and at the same time toxicity to man and animals is low. It normally does not taint materials to which it has been applied. Kenya, Zaire and Ecuador are the principal producers. Native of Yugoslavia.

Chrysanthemum leucanthemum L. Sp. Pl. 888. 1753.
Margarita.

A garden ornamental and cultivated for the flower market as a cash crop in the Central American highlands. Naturalized in Costa Rica.

Chrysanthemum parthenium (L.) Pers. Syn. Pl. 2: 462. 1807. Matricaria parthenium L. Sp. Pl. 890. 1753.

Chusita, artemisia, margarita, altamisa, feverfew.

Planted as an ornamental and often naturalized. Commonly used as a home remedy. Native of Europe.

Chrysanthemum segetum L. Sp. Pl. 889. 1753.
Espinaca china, corn marigold.

Adventive in cultivated fields and occasionally grown as an ornamental. In Guatemala, at least, the tender young plants are offered in the markets as pot herbs. Native of the old world.

Cichorium intybus L. Sp. Pl. 813. 1753.
Chicoria, achicoria, escariola, chicory.

Chicory has been grown in Guatemala and perhaps elsewhere in Central America for its fleshy roots which, when dried, pulverized and roasted are used as a flavoring for coffee, or even

as a substitute for it. Some of the best "New Orleans coffees" are flavored with chicory. A common and rather attractive roadside or old field weed in temperate regions. Probably not naturalized in Central America. Native of Europe.

Cynara scolymus L. Sp. Pl. 827. 1753.
Alcachofa, artichoke, globe artichoke.

Artichokes are occasionally seen in markets in Central America and often are a "prestige" vegetable in better hotels in Guatemala and Costa Rica.

DAHLIA. — genus of very attractive plants usually of cool mountain regions, natives from Mexico through Central America. Widely grown as ornamentals and the species undoubtedly hybridizing. For a "Revision of the genus Dahlia", see Paul D. Sorensen, Rhodora 71: 309-461. 1969.

Dahlia coccinea Cav. Icon. Pl. 3: t. 266. 1794.
Dahlia, dalia, dalia de monte, chunay de zope, chunisboch, comida de coche.

Native in Mexico and Guatemala. Grown as an ornamental for the attractive red to yellow flowers. Doubtless naturalized in many places in the cool tropics, apparently so in Peru.

Dahlia imperialis Roezl, Gartenflora 12: 243. 1863.

Catarina, Santa Catarina, dalia de palo, flor de la concebida, c'olox, runai, tunai.

A beautiful plant common in western Guatemala as a horticultural and a native plant. The pink to lavender rays are especially attractive. Easily propagated from stem cuttings. Native and/or naturalized from Mexico and Guatemala to Colombia.

Dahlia pinnata Cav. Icon. Pl. 1: 57, t. 80. 1791.
Dalia.

Originally grown in the Madrid botanical garden from Mexican seed and even at that time with multiseriate lavender or purple ray flowers and assumed to have been of hybrid

origin. Mexico, cultivated and spontaneous in Guatemala and perhaps elsewhere.

Gaillardia pulchella Foug. Mém. Acad. Sci. Paris 1786: 5. 1788.

Cambray, gallarda, gallardia, gallardina, jacalate, jalacate extranjero, pompón.

Native of western and southern United States, often grown as an ornamental in Guatemala and sparsely naturalized. The cultivated plant is var. picta (Sweet) Gray.

Eupatorium albicaule Sch.-Bip. ex Klatt, Leopoldina 20: 89. 1884.

Ixhotz, tiñe cordel, soscha, xoltexnuc, old woman's walking stick.

The plant has been used, at least in Honduras, as a source of a green dye for twine, textiles and other articles.

Helenium integrifolium (HBK.) Benth. & Hook. ex Hemsl. Biol. Cent. Am. Bot. 2: 227. 1881; L. Wms. Fieldiana, Bot. 24, pt. 12: 371, t. 121. 1976. Actinea integrifolia HBK. Nov. Gen. & Sp. Pl. 4: 297, t. 410. 1820.

Machul, quiaquén, veneno, mirasol.

Native in Mexico and in the high mountains of western Guatemala. Common in the Cuchumatanes and one of the few plants not grazed by sheep. It is said to be poisonous to sheep but whether it is or not or just unpalatable I do not know. Among the Indian sheep growers it does have the reputation of being poisonous.

Helianthus annuus L. Sp. Pl. 904. 1753.
Girasol, sunflower.

Cultivated in temperate regions and occasionally in the tropics for the seeds which may be used for animal food or as a source of an edible or a semidrying oil. Seeds grown at Bárcena in Guatemala showed about 50 percent of oil, which is high, and about 24 percent of protein. The oil is satisfactory as a cooking or salad oil and may be hydrogenated and made into

margarine or shortening. The U.S.S.R., Argentina and the United States are large producers of sunflower seed. The average per hectare yield of seed in Argentina is reported to be about 950 kilos.

Lactuca sativa L. Sp. Pl. 795. 1753.
Lechuga, lettuce.

Lettuce may be grown in the highlands of most Central American countries and is to be found in most large markets. Both leaf lettuce and head lettuce are grown. Head lettuce does quite well at 800 meters and above if cared for properly. Several horticultural varieties of both head and leaf lettuce have been seen. Native of the Old World, often weedy in temperate climates.

Matricaria courrantia DC. Prodr. 6: 52. 1837. D. Nash, Fieldiana, Bot. 24, pt. 12: 391, t. 129. 1976.

Manzanilla, matricary.

A well known plant in much of Central America, cultivated and spontaneous, easily distinguished by the prominent apple-like odor. Used as a domestic medicine and often fantastic claims are made for its curative powers for almost any affliction. Bunches of dried or fresh plants are offered in most Guatemalan markets and to a lesser extent in markets throughout Central America.

Onoseris onoseroides (HBK.) Robinson, Proc. Am. Acad. 49: 514. 1913.
Papelillo.

The tomentum on the stems of the plant was used, in times before the introduction of matches, as the wick with which to start fires using flint and steel.

Salmea scandens (L.) DC. Cat. Hort. Monsp. 141. 1813.
Bajche, caycán, kekchicay, vara de fuego, salta afuera, duerme boca, oreja de conejo.

Scandent shrubs from Mexico to Panama, the West Indies and tropical South America. A decoction from these plants is

much used in Alta Verapaz in domestic medicine. In Belize and El Salvador used as a fish poison or stupificant and said to be so powerful that it causes the fish to jump out of the water, hence one common name. It is reported that if the root is chewed the tongue and mucus membranes are deadened.

Spilanthes ocymifolia (Lam.) A. H. Moore, Proc. Am. Acad. 42: 531. 1907.

Cocaína falsa, duerme lengua, sanguinaria, herba de perro, herba de rabia, hierba de sapo.

The roots when chewed act as a local anesthetic on the mucus membranes of the mouth. It has been used as a remedy for toothache. Tropical America, widely distributed as a weed.

Tagetes erecta L. Sp. Pl. 887. 1753; L. Wms. Fieldiana, Bot. 24, pt. 12: 381. 1976.

Flor de muerto, marigold, many native names in Guatemala.

One of the common garden plants of Central America and around the world. Native of Mexico and possibly also of Guatemala. The plant has been cultivated in Mexico and Guatemala for centuries and may have had religious significance prior to conquest times. Further notes in the Flora of Guatemala, cited above.

Tagetes lucida Cav. Ic. Pl. 3: 33, t. 264. 1794.
Pericón, and several native names.

Native of Mexico and Guatemala, perhaps also of El Salvador and Honduras, or spontaneous there and elsewhere. Widely used for digestive disturbances and I have found it useful. See my notes in Flora of Guatemala (Fieldiana, Bot. 24, pt. 12: 384-385. 1976) for a more complete account.

Tragopogon porrifolius L. Sp. Pl. 789. 1753.
Salsifí, oyster plant, salsify.

A biennial, the edible root about 30 cm. long. The roots are occasionally found in markets in Central America, where it

is grown in the highlands. Native of Europe but widely naturalized around the world.

VERNONIA: One of the largest genera of the Compositae and not uncommon in much of Central America. The plants often with strong odors and, as might be expected, several are used as home remedies, perhaps more than those given below.

Vernonia leiocarpa DC. Prodr. 5: 34. 1836.
Acerillo, hoja blanca, palo de asma, qán, caáx, supup, suquinay.

A decoction of the plant is used in El Salvador for asthma.

Vernonia tortulosa (L.) Blake, Proc. Biol. Soc. Wash. 39: 144. 1926. Conyza tortulosa L. Sp. Pl. 862. 1753.

Rash k'ám.

Used commonly in Alta Verapaz to treat digestive disturbances. Native from Mexico to Costa Rica.

Zinnia elegans Jacq. Coll. Bot. 5: 152. 1789.
Mulata, berjima, ambolia.

Native of Mexico, used as an ornamental in Central America and around the world. Often spontaneous.

CONNARACEAE

Shrubs, small trees or vines with alternate, compound leaves; flowers usually perfect, actinomorphic or somewhat zygomorphic; fruit a capsule usually with a single seed, the seed arillate in ours. A small pantropical family of about 24 genera and some 300 species. Perhaps related to the Leguminosae but placed near the Anacardiaceae by Hutchinson.

Rourea glabra HBK. Nov. Gen. & Sp. 7: 41. 1825; Standley & Calderón, Lista Prelim. de las Plantas de El Salvador 91-94. 1925.

Canjuro, canjura, tietie.

The tough pliable stems are sometimes used as a substitute for cordage; the root is said to contain a red dye. The seeds

are believed to be poisonous, containing a convulsive poison, and are made into a paste with maize in El Salvador to poison undesirable animals. It is also believed that certain birds may eat the seeds with impunity but that the flesh of these birds if eaten by man may cause poisoning. In the publication of Standley and Calderón, cited above, there is a long account of the plant as a convulsive poison, mostly taken from the works of Carlos Renson.

CONVOLVULACEAE

Vines, herbs, shrubs and rarely trees, one genus of parasitic vines; leaves simple but often lobate, pinnate or pectinate, alternate; the flowers usually perfect, actinomorphic and pentamerous, often showy but fugaceous; the ovary usually of 2-4 almost free carpels; the fruits with 4-1 cells, usually capsular.

The family is most abundant in the tropics where the genus Ipomoea contains some 300-400 species. The sweet potatoes are exceedingly important as a subsistance crop in the tropics and as a market crop in tropical and subtropical regions. Sweet potatoes are one of three useful plants which were in both hemispheres in pre-Columbian times. There are many ornamentals in the tropics and many weeds in plantations and pastures.

Calonyction aculeatum (L.) House, Bull. Torr. Bot. Club 31: 590. 1904.

Flor de luna, luna blanca, bejuco de tabaco, campanilla blanca, pitoreta, galán de noche, garza, pañol de niño or pañal de niño, moon-flower.

The milky sap contains a resin-like substance which coagulates the latex of Castilla. The tough stems have been used to suspended tobacco in the drying sheds, hence the name bejuco de tabaco. In India the new leaves and the fleshy calyces are used as vegetables.

Ipomoea batatas (L.) Poir. Encycl. 6: 14. 1804.
Camote, iz, sweet potato.

There is no conclusive evidence as to the place of origin of the sweet potato. It may have originated in Africa and

reached America by way of the islands of the Indian Ocean and across the Pacific to Peru a few centuries before the time of discovery. It seems more likely, however, that the sweet potato is of American origin and that it spread westward across the Pacific. There is no question that sweet potatoes were in both hemispheres before the discovery of America. The systematics of the sweet potato is difficult and at this late date it will be nearly impossible to prove that this important plant of both the new and the old world were the same species, or that they were not. It seems reasonable to think that they are of American origin and all of one polymorphic species. Fertile plants producing seeds are almost unknown which may indicate a long period in cultivation.

The name camote is derived from the Nahuatl name camotl or camotli. Variations of this name are used wherever the Spaniards extended their control, and is commonly used in the Orient. In Central America the word camote is used for many underground tubers so caution must be used in assuming that camote invariably refers to sweet potatoes.

There are literally hundreds of horticultual varieties of sweet potatoes in cultivation in the tropical world. The area where they may be grown extends well into temperate regions and they are often an important crop in these cooler regions. One advantage of the crop is that it may be left in the ground until needed. It does not keep well in the tropics after being harvested.

The tender shoots of sweet potatoes (puntas de camote) are used as pot herbs although this use in not common in Central America.

Sweet potatoes are said to be naturalized in Central America but I have never seen them as spontaneous plants.

Ipomoea purga (Wendler) Hayne, Arzn. Gew. 12: t. 33-34. 1833.

Mecoacán, churristate, jalap, jalap root, quilamul, quiebra cajete, nacta, campanilla, campanula.

A resinous drug used as a hydrogogue cathartic and emmenagogue is extracted from the tuberous roots of this plant. It is

a drastic purgative and should be used only when recommended by a physician. Native from Mexico through Central America and said to be cultivated in Mexico, Jamaica and in India. The resin is known as Resina Jalapae, an unfortunate name since the resin was believed to have been derived from Mirabilis jalapa.

(Ipomoea triloba L. Sp. Pl. 161. 1753.
Campanilla.

Not a useful plant but a pernicious weed in pastures and thickets on the Pacific side of Central America. The species extends from the southern United States to southern Argentina.)

CORIARIACEAE

Shrubs with angulate branches with the lower ones opposite or ternate, the upper ones opposite; leaves opposite, simple, entire; flowers perfect or subpolygamous. A family with one genus and perhaps a dozen species, some with very wide range, the following one in the Americas.

Coriaria thymifolia Humb. & Bonpl. ex Willd. Sp. Pl. 4: 819. 1805.
Moco tinto, moco de chompipe.

The leaves and the fruits contain a poisonous principle which causes convulsions in animals, increased heart action and breathing, and finally death due to asphyxiation and heart failure. The berry-like fruits are sweet and have been eaten by children, occasionally with disastrous results. The plant is abundant in the highlands of Guatemala and seems not to be grazed by the abundant sheep. The Indians living in the region seem not to know that the plant and fruits are poisonous. A red dye, sometimes used like ink may be made from the fruits. The wide-ranging plant, Mexico to South America, is known only from Guatemala in Central America.

CRASSULACEAE

Annual or perennial herbs (ours), succulent; leaves opposite, whorled or alternate, fleshy, usually entire; flowers perfect. The

family contains perhaps as many as a dozen genera and from 500 to 1,000 species with little agreement among botanists as to the limits of either the genera or the species. There are many fine horticultural subjects.

Bryophyllum pinnatum (Lam.) Kurz, Journ. As. Soc. Beng, 40 (II): 52. 1871.

Hoja de la vida, hoja de aire, terneritos, sánalotodo, air plant, life plant.

Found nearly everywhere in Central America either in cultivation or spontaneous. The plant is propagated from young plants produced from the notches of the leaves. Seed is set rarely. The origin of the plant is unknown but it is now everywhere in the tropics. The plants have no special use except as ornamentals.

CRUCIFERAE

Annual or perennial herbs, rarely shrubby; the leaves alternate, simple or dissected, the basal ones sometimes in rosettes; flowers perfect, the petals usually four and in the form of a cross (hence family name Cruciferae) i.e. cross-bearing). A large and complicated family with some 350 often poorly defined genera and some 2,500-3,000 species, mostly in temperate regions of the northern hemisphere, relatively few in the tropics. The family contains many economically important crops, many weeds and a number of ornamentals.

Armoracia rusticana Gaertn., Mer. & Scherbius, Fl. Wett. 2: 426. 1800; Fosberg, Baileya 14: 60. 1966.

Rábano de caballo, rábano picante, horse radish.

Horse radish does not do well in Central America. I have seen it in Guatemala and in Costa Rica but rather poor material. The plant is perennial with a large root which is used to make a sauce or condiment. Native of Europe.

BRASSICA.— The most important members of the Cruciferae, economically, belong to the genus Brassica. Brassica oleracea is the wild ancestor of some of our most important vegetables and from it there have been derived a number of good vegetables, most of which are grown in Central America. Cab-

bage is perhaps the most important of these and it is a very anccient plant in cultivation going back more than 4,000 years. A second important use of the Brassicas is for the oil from the seeds but this particular use is of little or no importance in Central America. Some are grown as condiment plants, mustard comes from the seeds of some of them. None are native to our region.

Brassica alboglabra L. H. Bailey, Gentes Herb. 1: 79. 1922.

This species which is cultivated in China for its foliage has been reported for Guatemala.

Brassica campestris L. Sp. Pl. 666. 1753.

Mostasa, mostaza, mostaza blanca, mostacilla, plantita de nabo, mustard, field mustard.

Used in our region as a pot herb. Some forms of the species are grown for the seed oil. Often a troublesome weed in the highlands.

Brassica caulorapa (DC.) Pasq. Cat. Ort. Bot. Napoli 17. 1867.

Colinabo, kohlrabi.

Kohlrabi may be grown successfully in the highlands of our region and is to be found occasionally in markets but is not much appreciated. The edible part is the stem just above ground which enlarges to 5-10 cm. in diameter, and bears leaves at the top. It may be used either as a cooked or a raw vegetable.

Brassica juncea (L.) Coss. Bull. Soc. Bot. France 6: 609. 1859.

Mostaza, leaf mustard.

Spontaneous or perhaps cultivated, occasionally as a weed. The tender terminal parts of the plant are used in most regions of Central America as a pot herb, and occasionally cooked with meat or other foods as a condiment. Var. foliosa Bailey and var. crispifolia Bailey may occur. The seeds may be used as a condiment.

Brassica nigra (L.) Koch in Roehling, Deutschl. Fl. ed. 2, 4: 713. 1833.

Mostaza, mustard.

Spontaneous and weedy or perhaps cultivated occasionally, The leaves and the tender apical shoots are often used as pot herbs. The seeds are the principal source of the common table mustard used as a condiment. A fixed oil is extracted from the seeds and a caustic essential oil may be obtained also. Mustard powder is used in medicine as a rubrifacient and applied in a poultice.

Brassica oleracea L. Sp. Pl. 667. 1753.

The wild plant, native along the coasts of western Europe, is presumed to have given rise to the following varieties, all of which are cultivars.

Var. acephala DC. Syst. Nat. 2: 583. 1821.
Kale.

This variety has been seen in Honduras and may be in cultivation elsewhere. The leaves are used as pot herbs.

Var. botrytis L. Sp. Pl. 667. 1753.
Coliflor, cauliflower.

Cauliflower is commonly grown in the highlands of our region and is to be found in most markets. It is perhaps the cruciferous vegetable most appreciated, after cabbage. The part eaten is the large heads of aborted white flowers which are borne on much thickened branches.— This varietal name also applies to the heading broccoli which I have not seen in our region. See also var. italica.

Var. capitata L. Sp. Pl. 667. 1753.
Repollo, repollo morado, cabbage, purple cabbage.

Cabbage is one of the most common vegetables in the markets of Central America. It is grown from near sea level to some 2,500 meters or more. It grows and produces best in the highlands where both green and purple kinds are cultivated probably in many horticultural varieties. Cabbage of the best quality is found in Guatemala and Costa Rica where it grows at elevations where most other crops will not survive. The vegetable is commonly used in stews and similar dishes. It finds use in salads and often as an uncooked fresh vegetable. The plant is very ancient in cultivation in Europe.

Var. gemmifera (DC.) Zenker, Fl. Thuering. 15: 2. 1836.
Brusela, col de Brucela, repollitos, colitos, Brussels sprouts.

I have seen Brussels sprouts growing in Guatemala and Costa Rica but no doubt are grown elsewhere in our region. The axillary buds along the stems develop into small heads, instead of branches, in appearance much like small cabbages hence the names repollitos and colitos. The vegetable is not common in markets and usually is quite expensive. Grown best at higher elevations in our region. The variety originated in cultivation.

Var. italica Plenek, Icon. Pl., ed. 6: 29, t. 534. 1794.
Brocolí, broccoli, sprouting broccoli.

Broccoli can be grown in Central America, at least in the highlands, but it has not yet become a popular vegetable. It is used as a pot herb or occasionally in stews. I have found broccoli in Honduras and Costa Rica but it is undoubtedly in Guatemala and perhaps elsewhere. Probably all of the broccoli grown in our region, as well as in the rest of the continent, is sprouting broccoli. Another kind is known, a form of cauliflower which goes under the varietal name botrytis, but this is not known in Central America.

Brassica pekinensis (Lour.) Rupr. Fl. Ingr. 96. 1860.
Repollo chino, repollo de China, Chinese cabbage, pe-tsai.

Chinese cabbage is occasionally grown for the long succulent leaves which form elongated heads. It is used as a green vegetable, as a pot herb or in stews. The crop is grown from the coast well into the highlands. Best results are had in the highlands under irrigation in the dry season. I have seen it in markets in Guatemala, Honduras and Costa Rica.

Brassica rapa L. Sp. Pl. 666. 1753.
Nabo, nabitos, turnip.

Turnips are grown and do quite well in the highlands. The roots are found in many markets and are quite uniform and are used either raw or cooked. Very young plants with small roots are sold to be used as pot herbs. The crop is an old one and has been grown for perhaps 4,000 years. It is reported to have been introduced into Mexico in 1586 and the introduction into Cen-

tral America probably came at about the same time. Rutabagas (Brassica nabobrassica (L.) Miller), which are similar to turnips, may be grown but have not been recorded.

Capsella bursa-pastoris (L.) Medic. Pflanzengatt. 1: 85. 1792.
Bolsa de pastor, shepard's purse.

An occasional weed in cultivated ground in the highlands of our region.

The tender plants may be used as pot herbs, as are many other plants of the mustard family when young and tender.

Cardamine fulcrata Greene, Pittonia 3: 155. 1897.
Quilete, berro amargo, jasmín, yacan-chamel.

The first two names may indicate that the plant is used as a pot herb. Known in Guatemala but I have never seen it offered in the market.

Lepidium virginicum L. Sp. Pl. 645. 1753.

Culantrillo, mastuerzo, lentejuela, lentejuelilla, antajuela, antejuelilla, sacobé, jilipliegue, peppergrass.

Tender plants may be used as pot herbs. It has an agreeable but sharp flavor but has not been seen offered in the markets of our region. The plant is a weed of temperate North American origin.

Nasturtium officinale R. Br. in Aiton, Hort. Kew. ed. 2, 4: 110. 1812.
Berro, berros, guizocul, rechusut, watercress.

Watercress is cultivated and naturalized in springs and streams in the highlands of most of Central America and is to be found in most markets. It is commonly used in salads but it is questionable that uncooked material should be eaten, due to possible contamination by amoebas. Native of Europe and Asia.

Raphanus sativus L. Sp. Pl. 669. 1753.
Rábano, radish.

Radishes are commonly grown in Central America and are to be found in most markets. The roots are used as a raw vegetable or are sliced and mixed into salads. Most radishes grown are of the red, globe varieties. White kinds and long varieties are occasionally seen. Seeds for most kinds are probably imported. Radishes are old in cultivation, perhaps 2,000 years, but still are not far removed from the primitive types to which they may revert and persist for a few years spontaneously.

CUCURBITACEAE

Annual or perennial herbs, most often prostrate scandent vines with tendrils, the stems and leaves often scabrid; leaves alternate, usually palmate, sometimes pinnate; plants monoecious or dioecious, rarely the flowers perfect; flowers actinomorphic, gamopetalous, the sexes often quite different; ovary inferior.

A large and difficult family of some 130 genera and perhaps as many as 1,000 species, mostly pantropical but a few in temperate regions and many cultivated there. Plants of this family were important basic foods which helped to make pre-Columbian civilizations of high order possible in our region. Economically Cucurbita is the most important genus of this family. Jennie V.A. Dieterle's account of the Cucurbitaceae in The Flora of Guatemala (Fieldiana, Botany 24, pt. 11:306-395. 1976) is a useful account of the family for our region.

Ahzolia composita (Donn.-Sm.) Standl. & Steyerm. Fieldiana, Bot. 23: 92. 1943.

Quisquilillo, quisquil de ratón, huisquil de ratón, ixmaxim.

The fruit is fairly large and much like those of **Sechium edule**. It is said to be used in western Guatemala in washing clothes because of the large amount of saponin which it contains. So far as known the fruit is not used as food. The common names indicate the similarity to Sechium.

Benincasa hispida (Thunb.) Cogn. in DC. Monog. Phan. 3: 513. 1881.

Calabaza China, ash gourd, ash pumpkin, white gourd, Chinese preserving melon.

It is indeed curious that this plant is not recorded from Central America or Mexico, nor have I seen it there. The plant is perhaps native of Malaysia and is now grown in most tropical parts of the world. The plant has been reported, by Roig y Mesa, from Cuba and it is or has been grown in the United States. The fruit, covered with a white, waxy bloom, is used in India as a vegetable where curries are made from it or it is candied. The seed yields a pale yellow oil and both seeds and oil are said to have anthelmintic properties. The plants survive in sheltered valleys up to 900-1200 meters and should be introduced into our region.

Cayaponia attenuata (Hook. & Arn.) Cogn. in D C. Monog, Phan. 3: 769. 1881.

Hierba de tamagaz, retamara, taranta, bolito.

In El Salvador the stems were used for scrubbing dirt from clothes and sold in the market as a substitute for soap.

Citrullus colocynthis Schrader, in Linnaea, 12:414. 1838. Colocynth.

Not recorded from Central America. Commonly cultivated in dry regions of tropical and subtropical Africa for the drug market. The pulp of the fruit contains an alkaloid and a resin, both intensely bitter, used as cathartics.

Citrullus lanatus (Thunb.) Matsumura & Nakai, Cat. Sem. Hort. Bot. Univ. Tokyo 38. 1920. C. vulgaris Schrad. in Eckl. & Zeyher, Enum. Pl. Afr. Aust. 279. 1834.

Sandía, watermelon.

Watermelons are grown commonly along rivers at low elevations in our region and occasionally in the hot interior valleys. They are planted usually at the end of the rainy season, or soon thereafter, along stream banks where water can be carried to them every day. There is no reason why melons could not be more widely grown in hot dry valleys if water for irrigation were available. Large quantities of the fruits are grown along the Lempa River in El Salvador and along the rivers in the Comayagua Valley of Honduras. Days hot enough to mature melons usually are not found at elevations above 1,000 meters.

Quality of melons found in markets and along roadsides varies from poor to quite good. Native of tropical Africa and in cultivation for many centuries. Watermelons were an important oilseed crop in the Sudan, the seeds normally exported to Egypt.

Cucumis anguria L. Sp. Pl. 1011. 1753.

Sandía de ratón, meloncillo de ratón, pepinillo del diablo.

In Guatemala the fruits are sometimes eaten raw in salads or perhaps made into pickles.

Cucumis melo L. Sp. Pl. 1011. 1753.

Melón, melón de olor, melón, muskmelon, cantaloupe.

Muskmelons have been grown for a long time in Central America, mostly along river valleys during the dry season, and were of rather poor quality. Improved varieties of cantaloupes have been introduced in recent years and are very fine and if produced in quantities might be exported.

Cucumis sativus L. Sp. Pl. 1012. 1753.

Pepino, pepino de ensaladas, pepino de España, cohombro, cucumber.

Widely grown in our region and to be found in most markets. Very often ripened and used for a cooked vegetable but usually used as a green or salad vegetable. The name pepino de ensalada is used only to distinguish the plant from pepino de fruta (Solanum muricatum) which see. Native of southern Asia.

CUCURBITA. There are in the account that follows five specific names given in this genus. Four of these species are cultivated and are unknown from the wild with any certainty. One, Cucurbita lundelliana, is included because it is a potential source of a bitter principle and is used for other purposes as well. The separation of the cultivated forms one from another is difficult and no thoroughly satisfactory method to distinguish the kinds has been demonstrated. Probably but three species occur in Central America. The cultivated cucurbits are all native of America and were an important part of the basic foods upon which the autochthonous American civilizations were developed. The literature on these cucurbits, systematic and horticultural, is voluminous. The first good account of the cultivated kinds is

that of Bailey, cited below and it is much like that treatment used in his Manual of Cultivated Plants. Two other useful papers on the cucurbits are cited.

Bailey, L. H.: The domesticated Cucurbitas, in Gentes Herbarum 2: 63-115, illus. 1929.

Whitaker, Thomas W. and G. H. Bohn: The taxonomy, genetics, production and uses of the cultivated species of Cucurbita, in Econ. Bot. 4: 52-81, illus. 1950.

Cutler, Hugh C. and Thomas W. Whitaker: History and distribution of the cultivated cucurbits in the Americas, in American Antiquity 24: 469-485, illus. 1961.

Cucurbita ficifolia Bouché, Verh. der Ver. des Gartenb. Berlin 12: 205. 1837.

Chilacoyote, chilacayote, malabar gourd (incorrectly), chiverre, chiverro.

Cultivated and perhaps sometimes spontaneous in the high mountain regions in all of the Central American countries and distributed down the Andes of South America. There exist both black-seeded and white-seeded forms of this species but I have seen only the white-seeded in our region. It is not impossible that the Central American plant is as yet an undescribed species, distinct from the South American one. I have never seen this species in our region where it was unquestionably native but did find it in the Montaña de las Nubes in Guatemala where it might have been native, or at least spontaneous. Standley has reported the plant to be naturalized in Costa Rica.

The fruit is little used as human food, except in the highlands of Guatemala. A kind of confection is made from the fruits by boiling it with crude sugar. It is occasionally used as a stock feed. The fruits of chilacoyote are large and not very useful and the word is sometimes applied in a depreciatory sense to other things,— one of the past presidents of Guatemala is said to have been given the nickname "Chilacoyote."

Cucurbita lundelliana Bailey, Gentes Herbarum 6: 297, illus. 1943.

Bitter pumpkin, wild pumpkin.

Native of the Petén of Guatemala and of Belize. Lundell reports (in lit.) that "The Maya women use the pulp in washing clothes, possibly for its detergent action." The fruits of the plant are exceedingly bitter.

Cucurbita maxima Duchesne, Lam. Encyc. 2: 151. 1786.
Autum or winter squashes.

Squashes of this species are often reported in cultivation but I have never seen them.

Cucurbita moschata (Duch.) Poir., Dic. Sci. Nat. 8: 234. 1818.
Sapayo.

Reported in Central America but I have never seen material which I could refer here.

Cucurbita pepo L. Sp. Pl. 1010. 1753.

Ayote, ayote tierno, ayote común, calabaza, güicoy, pipián, zapallo, sapayo, pis, apí bat, kum, pumpkins (and also squash sometimes), pepita de ayote, semilla de pipián, semilla de ayote, flor de ayote.

This I believe to be the common cucurbit grown in our area. It is wonderfully variable in its fruits and there must be literally hundreds of variants. The fruits gathered when immature and commonly used as vegetables are usually called pipián or sometime güicoy. The plants from which this variety comes must be near var. ovifera (L.) Alef. The turbinate squash or pumpkin, var. melopepo (L.) Alef., is occasional. Plants reported from our region as C. maxima or C. moshata probably belong here.

Pumpkins often are grown intercropped with maize, in fact are rarely seen alone unless in kitchen gardens or on midden heaps. They provide a source of food from tender young leaves or growing points, flowers, young fruits and the mature fruits, the last may be stored and last well into the dry season. The staminate flowers are produced in greater numbers than required for adequate pollination so they are picked and eaten or taken to market. These flowers may be boiled along with other vegetables but most often are put into a batter and either baked or fried.

The young and tender shoots, called **puntas de qüicoy** or **hojas de ayote**, are commonly used as pot herbs. The tender fruits of the common pumpkin, commonly used either as a cooked vegetable or put in a batter and fried, are called **ayote tierno**. Mature fruits are used in a variety of ways but by most people are used in stews or baked, often directly in the fire. The seeds of the pumpkin are often shelled then roasted, salted and eaten. A confection from these kernels, held together with a heavy syrup and then roasted is called **pepitorio**. The seeds are usually called **pepita de ayote**. An edible oil may be extracted from the seeds but is not recorded from our region.

The pumpkins or squashes belonging to this species are among the most ancient of cultivated plants in America. Shell fragments thought to belong to this species have been dated at 7000-5000 B.C. (Willey in Science 131: 78. 1960).

Cyclanthera pedata (L.) Schrad. in Linnaea 8: Litt. 23. 1833.

Caiba, caifa, pepino.

Cultivated, spontaneous and perhaps native, Mexico to Bolivia. It is a vine which quickly covers fallen trees, fences and open banks. The seeds and spongy material is removed from the fruits, which are usually 8-12 cm. long, and the cavity is filled with ground meat or other filling and then baked. The tender shoots and the immature fruits may be eaten.

Ciclanthera tonduzii Cogn. Bull. Soc. Roy. Bot. Belg. 30: 274. 1892.

Caifa.

The young fruits and the tender new growths are used by the country people of Costa Rica.

Echinocystis coulteri (Gray) Cogn. Mem. Acad. Cour. Acad. Belg. 8vo. 28: 88. 1878.

Chayotillo.

The small fruits, similar to those of **Sechium edule**, are occasionally used in Costa Rica.

Elateriopsis oerstedii (Cogn.) Pittier, Contr. U. S. Nat. Herb. 13: 125, t. 19. 1910.

Caifa, chayotillo.

Standley reports that the fruits are a rather common vegetable in central Costa Rica and that the plants are often cultivated. I have not seen them cultivated nor in the markets.

Fevillea cordifolia L. Sp. Pl. 1013. 1753.
Cabalonga, chichimora, contra veneno, sequa oil.

The large and attractive seeds are often found offered in Central American markets as a cure for various afflictions. The seed kernel contains an odorless fat known as sequa oil which is bland tasting and about the consistency of butter. It has been suggested for use in candle or soap manufacture. It is reported to be poisonous.

Franzia pittieri (Cogn.) Pittier, Contr. U.S. Nat. Herb. 13: 129, illus. 1910.

Chayotillo, tacá, tacaco.

The fruits of this Costa Rican species are doubtless used as vegetables occasionally. The fruits are similar to those of Polakowskia and have an odor resembling that of a cucumber. As food they are poor.

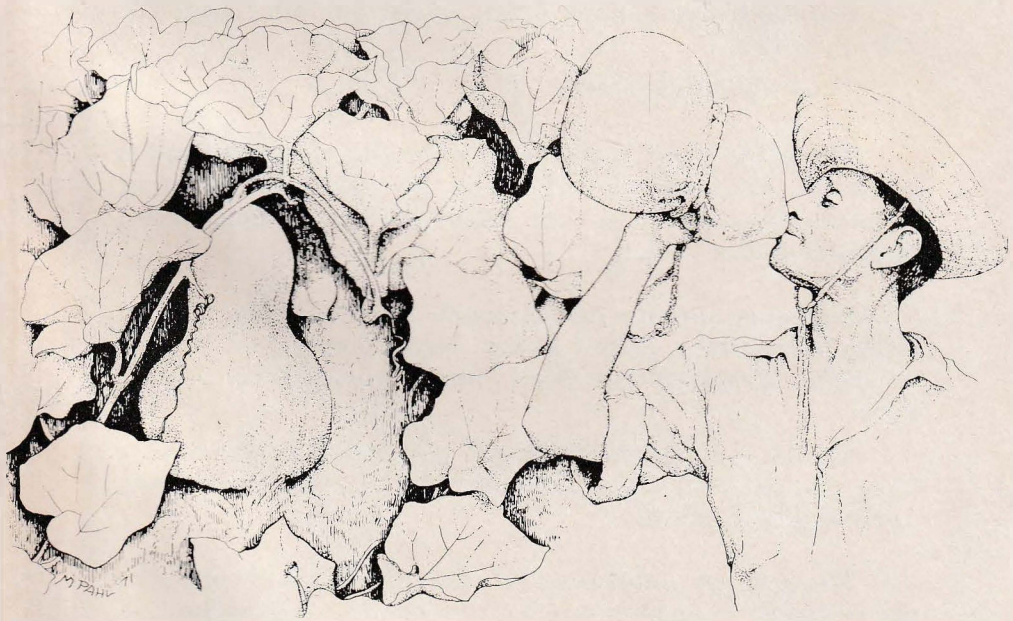
Lagenaria siceraria (Mol.) Standl. Field Mus. Bot. 3: 435. 1930. L. leucantha (Lam.) Rusby, Mem. Torrey Bot. Club 6: 43. 1896. L. vulgaris Ser. Mem. Soc. Phy. Genève 3 (1): 25. 1825.

Calabaza, cojombro, tecomate, tecomate de grilla, cumbo, tarro, tol, tal, bux, tzu, suj, suy, lek, pepino de chino, calabash, calabash gourd, gourd.

The calabash gourd is one of the three kinds of cultivated plants which reasonably can be demonstrated to have been in both the new and the old world in pre-Columbian times. The region of origin is not known and it has been credited to the tropics of several parts of the world but I think that it must have originated in eastern Africa and arrived to the new world by ocean currents. Calabash gourds are grown everywhere in Central America, or are spontaneous, and used for containers of all sorts. The fruits may be shaped as desired when still growing and while the shell is soft. Brightly colored "calabasas" of

plastic from Japan are replacing the natural ones and its principal use as a water container. The gourd finds dozens of other uses however, mostly as container for the many things found around a house or farm. Spoons, cups, plates, funnels, strainers, ladles, floats for fish nets, rattles and whistles, musical instruments such as the maraca and the sound boxes of marimbas. They are probably used as phallic symbols, at least in Guatemala. In Argentina and Paraguay a small fruited gourd is used as a container for the commonly used drink mate. The gourd is called mate or cuya and often is decorated by carvings or paintings.

The value of the gourd as an edible vegetable is little although some variations of it may be used. The seeds contain an oil which has not been used commercially.



Luffa acutangula Roxb. Hort. Beng. 70. 1814.
Paste, paishte, paxte.

Reported from El Salvador as a source of the vegetable sponge, perhaps confused with the following species.

Luffa cylindrica (L.) Roem. Fam. Reg. Veg. 2: 63. 1846.

Paste, pashte, paishte, estropajo, estopa, lufa, vegetable sponge, dish cloth gourd, sponge gourd.

An old world plant now widely distributed. The fiber that fills the interior of the fruit looks like and is used as a sponge. When the fruits mature and are dry it is quite easy to shake and wash out the undesired pulp leaving the fiber. Vegetable sponges are to be found in most markets in Central America and now are found in many stores in the United States.

Oil extracted from the seed has been suggested as a substitute for olive oil in Brazil.

Momordica charantia L. Sp. Pl. 1009. 1753.

Balsamito, bálsamo, sorosí pepino, pepinillo, balsalm pear.

Occasional in Central America. The warty fruit is orange and some 15-20 cm. long, the dark red aril around the seeds is sometimes eaten but the flavor is said not to be agreeable. The vegetable apparently is more common in the old world tropics, where it is used in curries. The seeds contain about 35 percent of oil and are often said to be toxic. Native of the old world tropics.

Polakowskia tacaco Pittier, Contr. U. S. Nat. Herb. 131, t. 20, ff. 40-41. 1910.

Tacaco, tlacaco.

The small fruits (4-7 cm. long) usually with soft spines, are said by Standley to be one of the common vegetables of central Costa Rica, where the plant is native. I saw it only once or twice in markets and thought the fruit of such poor quality and so full of fibers that it would be used only when there was nothing else to eat. There are perhaps better ones that I know. Pittier, who described this species, thought it to have been in cultivation or semicultivation by the Indians of Costa Rica for a long period of time.

Rytidostylis gracilis Hook. & Arn. Bot. Beechey Voy. 424, t. 77. 1841. Elaterium gracile Cogn. Diagn. Cuc. 51. 1877.

Cuchanito, chanchitos, cochinito, tunquito, quiamul, sandía de ratón.

Widely distributed and often weedy. The tender stems and young fruits sometimes cooked as a vegetable or used in pop-overs. Ripe fruits may "explode" in the hand when pressed. I have not seen these fruits in any market.

Sechium edule (Jacq.) Sw. Fl. Ind. Occ. 2: 1150. 1800.

Fruit: huisquil, güisquil, pataste, chayote, quisayote, chabote, güisquil perulera, perulera, huisayote, pastatilla.

Root: Chinta, chintla, ichinta, raíz, raíz de chayote.

Foliage: quelites de chayote, puntas de chayote, and probably others.

English: and Portuguese chayote, or often English speaking people use the word of the country. Sometimes chocho or xuxu or variations of these words in Portuguese.

The vocabulary above, while not complete, contains the commonly used names for the kinds of chayote with large green fruits and those with small whitish fruits. The Nahuatl words were chayotl or chayotli.

The fruits of chayote are perhaps the most common kind of vegetable to be found in the markets of Central and South America. There are a great many forms of the fruit. The common kinds are green with pale green flesh but, to my taste, the best form is the white or whitish one that is relatively small and usually spineless that is known as perulera or guisquil perulera. The fruits of both forms (and their variations) may be covered with soft spines or have spines only toward the base. Some are completely spineless. The fruits are usually 10-15 cm. long. or the perulera 5 to 8 cm. long.

The fruits are boiled, roasted or baked and when boiled are often used in stews with other vegetables and meat. The seeds, one to a fruit, are the best part of the fruit. The seed may protrude from the fruit. The roots are perennial and grow to considerable size, fifty kilos not being exceptional. The root is used as a vegetable, a confection made from it or it may be

eaten raw, principally as a source of water. Dark green fruited varieties usually produce the largest roots.

The tender growing points are often collected and cooked as pot herbs.

A brilliant silver white fiber from the stems was exported from Reunion to France for weaving womens hats and other fine articles. I know of no record of this use in Central America.

Chayotes are native of Mexico, possibly introduced into Central America by the Indians at a very early date or possibly native there also but I have never seen plants that I thought to be native. In our region it does best in the highlands but will grow in the dry or humid lowlands. Large plantations have been established in Costa Rica in recent years to produce fruits for local and export use.

Sicania odorifera (Vell.) Naud. Ann. Sci. Nat. ser. IV. 18: 181. t. 8. 1862.

Melocotón, melón de olor, cojombro, casabanana.

Fruits are often large, to 60 cm. long and nearly cylindrical; when ripe usually brownish-red and fragrant. The fruit is occasionally used as a vegetable or preserves are made from them, however the fruits are tough and not very good to eat. I have collected fruits from markets in Guatemala and Nicaragua. Native of the American tropics, possibly Brazilian, now widely distributed.

Trichosanthes anguina L. Sp. Pl. 1008. 1753.

Snake gourd, native of India, has not been recorded from Central America but may occur here. The fruits are 0.2-2 meters long and quite slender. The fruit is relished as a curry vegetable in India.

CUPRESSACEAE

Resinous evergreen shrubs or trees; leaves opposite or whorled, small and scale-like, appressed, the juvenile leaves often subulate; cones globose or nearly so, of 6-12 peltate scales which become woody as they mature and with an apical mucro; seeds winged and usually many.

Two genera native in Central America,- only in Guatemala but one cultivated widely, a third exotic genus cultivated.

Cupressus lusitanica Miller, Gard. Dict. ed. 8. 1768.
Ciprés, and many vernacular names.

Native from central Mexico to Guatemala and perhaps on Santa Bárbara mountain in Honduras. Widely planted as a timber tree or as an ornamental in Central America where several horticultural forms are to be found, among them a form with pendant branches (ciprés llorón) and a columnar form (ciprés romano.) The tree becomes a gigantic one in the mountains of western Guatemala, often to 30 meters tall with a trunk to 1 meter or more in diameter. The wood is much prized for construction in Guatemala and has been since colonial times. Large trees by 1975 were rare in the forest due to lumbering and doubtless all native trees in the forest due to lumbering and doubtless all native trees in the forest will be gone before the end of the century. The last good stand that I saw was in the mountains above Chimaltenango. I saw plantations of this tree in the high, dry mountains of Zaire, formerly Belgian Congo, where it was used in construction and for fuel but not considered a first class tree for either purpose. In Kenya an oil is extracted from this Cypress. Extraction of "oil of cypress" began in Guatemala in 1940. The oil is used for scenting soap, room sprays, deodorants and technical preparations.

The name Cupressus lusitanica, meaning Portuguese cypress, is an unfortunate one. It is thought that seeds were taken from Mexico in early colonial times and that the specimen called Cupressus lusitanica came from a tree cultivated at Bussaco in Portugal. Several other botanical names have been used for this tree, among those common in Mexican and Central American literatura are C. lindleyi Klotzsch and C. benthamii Endl.

Juniperus standleyi Steyerm. Field Mus. Bot. 23: 3. 1943.
Ciprés.

A much gnarled and distinctive tree on the highest summits of the Cuchumatanes mountains in Guatemala where it is used in construction and as a source of fuel by the Indians who raise sheep in those cold mountains.