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Botanical Medicine Monographs and Sundry

ON AN INDIGENOUS SPECIES OF CROTON.

By JOHN M. MAISCH.

Read at the Pharmaceutical Meeting, November 17, 1885.

A few months ago I was consulted about a plant which had been sent to this city by a farmer in the State of Georgia, with a letter in which the following statements were made concerning the properties of this plant:

“I do not know whether it will cure hay-fever, catarrh, consumption, or not; but I do know that it will cure several diseases. A tea made from this plant will give instant relief in cramp colic, will stop diarrhea, and, by gargling, will cure sore throat, also any kind of ulcers in the mouth; it will also cure the colic in horses. A man was cured of eating cancer by the use of this plant; but I do not know how he prepared it. When the green plant is cut a drop of bloody water runs Out; this blood applied on any kind of bruise, cut or bite will beat anything for healing that I have ever tried or seen tried; it will also stop the flow of blood. The plant appears to be perfectly harmless; I never heard of any one being injured by it.”

It was not the extravagant statements made by a non-medical man that attracted my attention, but the fact that the plant proved to be a species of Croton, which genus comprises about 450 species, the large majority of which are arborescent or shrubby. The stimulant and tonic barks known as *cascarilla*, *malambo* and *copalchi* are obtained from this genus; the drastic and irritating croton oil is extracted from the seeds of one species, and a kind of dragon's blood is yielded by several Mexican and South American crotons. In addition to the preceding, other woody species of the same genus, indigenous to tropical Asia or tropical America, are more or less employed there, their properties being usually stimulant or acrid, or in some cases irritant.

None of the herbaceous species of Croton appear to have been medicinally employed. In some older works *Croton chamaedrifolius*, Lamarck, a perennial herb growing in the West Indian Islands, is mentioned as being used as a vulnerary and in various forms of tumors. But the plant has been transferred to another genus, and is now known as *Acalypha chamaedrifolia*, De Candolle, while the *Croton chamaedrifolius*, Grisebach, is an annual plant, and does not seem to have been used in medicine.

Croton tinctorius, Linné, an annual plant of the Mediterranean region, has likewise been transferred to another genus; it is now *Chrozophora tinctoria*, A. Jussieu, or

Tournesoliatinctoria, Baillon. It is cultivated in France, the cultivation being confined to Grand-Gallargues, a village in the neighborhood of Nimes. The greenish juice in contact with ammoniacal liquids yields a kind of litmus, which turns red by acids, but does not become blue again under the influence of alkalis. Paint rags are made by dipping pieces of muslin into the juice and exposing them to the ammoniacal vapors arising from a mixture of urine and lime, or from, horse-dung, until the desired color is produced. This material is stated to be mostly exported to Holland, where it is used for the coloring of cheese and of certain liquors.

Five or six herbaceous species are indigenous to the United States east of the Mississippi, three of which, all annuals, occur northward as far as Illinois and Virginia, while the perennial species *Croton maritimum*, Walter, and *Cr. argyranthemum*, Michaux, do not appear to extend northward beyond South Carolina. The last named species is the plant, the curative properties of which have been referred to above. The nearly simple root is from 2 to 3 inches long, about $\frac{1}{2}$ inch thick at the neck, crowned with a broader irregular bead formed from the stem bases, of a light gray-brown color, and breaks with a short non.fibrous fracture, which is whitish and shows a thickish bark, the inner layer of which is of a red color, and a porous medullium. without medullary rays. The stem is about 12 or 18 inches high, branched, rather firm, and the lower portion somewhat woody; the leaves are alternate, about 1 or $1\frac{1}{2}$ inch long, with petioles of $\frac{3}{8}$ to $\frac{5}{8}$ inch in length, firm and thick, oval, oblong or obovate in shape, entire on the margin, rather obtuse at the apex, and narrowed at the base; the midrib is rather prominent on the lower surface; but its branches are quite indistinct. The flowers are of a silvery whiteness and form short terminal spikes, at the base of which the pistillate flowers are placed. All the aerial parts of the plant are densely covered with scales, imparting a peculiar lustre; these scales have become detached from the older portion of the stem, leaving minute circular scars, which remain visible for some time. Similar scars are also observed on the older leaves, particularly on the upper surface. The scales are formed of small glands, about 0.1 Mm. in diameter, and filled with a red mass; to these glands are attached from 50 to 60 colorless, elongated and stellately arranged cells, which project about 0.1 Mm., or a little more, beyond the gland, and are laterally cohering, except at the apex, which is free, pointed and usually somewhat curved or slightly hooked. The total width of the scales is about 0.3 Mm. or $\frac{1}{40}$ inch. The scales on the branches and on the leaves are alike. The root has a slightly aromatic and a more prominent and rather pleasant bitter taste. The leaves are more aromatic, and are decidedly pungent.

As far as may be judged from the physical properties, this plant probably does not possess any decided or very important medicinal virtues; still, in view of the reputation enjoyed by a number of the woody species of the same genus, it seems to be deserving of investigation. This was suggested more than twenty years ago by Prof. F. P. Porcher, in his "Resources of the Southern Fields and Forests;" the plant specially mentioned by him, *Croton maritimum*, is likewise covered with a silvery scurf, but it is confined to the coast districts, and has broadly oval and subcordate leaves.

MATERIA MEDICA NOTES.

Abstracts from Theses.

Cultivation of Peppermint in Michigan.—From his personal observations in the peppermint plantations, and from information received from mint growers, Dennis Reagan, Ph.G., describes the cultivation to be the same as was stated by M. Fred. Stearns, in 1858 (see *Amer. Jour. Phar.*, 1859, p. 35), except that the planting is done annually, the runners of the preceding year being used for the purpose. If the plants are raised from seeds in a nursery, they are reset every two years. Peppermint does not sprout freely after the second year, unless the soil is very rich and loose and the preceding summer has been wet and warm, or the ground is boggy.

The oil obtained per acre varies between three and twenty-six pounds, the average being about sixteen pounds; new mint generally yields a few pounds more than the old, the quality of the oil being the same. The principal weed growing in mint fields is *Erigeron (Conyza) canadense*, Lin.; the large growers remove it carefully from the field, and plants which are overlooked are separated from the cut mint, which is smaller. *Erechthites hieracifolia*, Raf., grows only in new clearings. Both these weeds are sometimes distilled separately, and the oils are occasionally used for adulterating oil of peppermint; oil of turpentine is also used for the same purpose. Oil of peppermint, when pure, is said to be rather slowly absorbed if dropped upon blotting paper, while it is at once absorbed if adulterated with any one of the three oils mentioned.

Ailanthus glandulosa, Desfontaines. —Fred. Horace Davis, Ph.G., has subjected the bark of this tree to proximate analysis; it is not stated whether the bark of the branches or of the trunk was used for the purpose.

By exsiccation at 100°C., the air dry bark lost 7 per cent. of moisture, and on incineration yielded 5.92 per cent. of ash; of the latter 25.8 per cent. was soluble in water (potassium and sodium chloride and phosphate), and the insoluble portion contained calcium, magnesium and iron as carbonate, sulphate and phosphate. The bark was successively treated with petroleum benzin, ether, alcohol, cold water, boiling water and dilute acid; fixed oil, chlorophyll, resin, wax, sugar, tannin, albumen, gum, starch, pectin, oxalic acid and probably another crystallizable organic acid, soluble in alcohol, were obtained. Distillation with water yielded a trace of volatile oil. Alkaloids and glucosides could not be detected.

MATERIA MEDICA OF THE NEW MEXICAN PHARMACOPOEIA. Part 8 BY THE EDITOR.

Genciana. Although *Gentiana calyculata*, *G. mexicana*, *G. Hartwegi* and other species of this genus are indigenous to Mexico, and several of them are abundant, they are not employed medicinally, but the root of *G. lutea* is used. The first named species is known as **Flor de Santo Domingo**, or **Flor de nieve** (snowflower).

Gobernadora de Mexico, *Zygophyllum Fabago*, Lin.; Zygophyllaceae; grows in

Mexico, but is indigenous to the Orient. The leaves are popularly used in baths and fomentations for relieving rheumatic pains, and the fruit preserved in vinegar like capers, hence the common name falsa alcaparra, and in English bean caper.

Gobernadora de Puebla, *Eupatorium veronicaefolium*, Kunth; Compositae; in the neighborhood of Puebla. The leaves are used like the preceding.

Goma de Sonora is an exudation of *Mimosa laccifera*, produced by the hemipterous insect, *Carteria mexicana*, Comstock. It resembles grain-lac, from which it differs in being less deeply red, in having a taste resembling that of succinic acid, and in becoming elastic when heated; it is used against metrorrhagies.

Goma mangle; from *Rhizophora Mangle*, Lin.; Rhizophoraceae; in Tampico and other coast districts. It forms rather voluminous masses or separate tears, 5 Cm. or more thick, is reddish-brown externally, dark red internally, bard, breaks with a conchoidal and opaque fracture, and has a sweetish mucilaginous taste and a peculiar odor. It dissolves in water without leaving any residue except the impurities, forming a mucilage of less consistency than that of gum mezquite.

Another variety of **goma mangle**, obtained from *Rhizophora Candell*, Lin., is in distinct slightly adhering tears, externally scaly, glossy, transparent, of little hardness, breaking with an uneven shining fracture, inodorous, of a mucilaginous taste, and dissolves less freely in water, but swells up and forms a thinner mucilage.

The gum is used in the Philippine Islands as a febrifuge, and in Mexico for relieving cough. The fruit is edible. The bark and also the fruit are used for tanning.

Gordolobo del país, *Gnaphalium canescens*, De Cand.; Compositae; in temperate regions of Mexico. The flowers of this species, as well as of *Gn. Berlandieri*, De Gand.; *Gn. hirtum*, Humb., and *Gn. Viscosum*, Humb., which are abundant near the capital, are used as a substitute for mullein as an emollient and pectoral.

Guaco, *Aristolochia fragrantissima*, Ruiz et Pavon; Aristolochiaceae; in Colima, etc. The branches, which are stimulant and antispasmodic, are woody and twining; the bark is gray, thick and fissured; the cork rolled up; the wood whitish and with large ducts; the odor aromatic, resembling that of French marigold (*Tagetes*), and the taste bitter and aromatic. The drug contains a volatile oil, tannin, resin, bitter principle, gum, starch and salts. It enjoys considerable reputation as an antidote to poisoning by scorpions, vipers and other animals, and is used externally in purulent ophthalmia, blennorrhagia, chronic ulcers, vaginitis, etc. The powder is given in doses of 1 to 5 Gill., and an infusion is made containing 20 Gm. to the liter. *Arist. grandiflora*, Swartz, has analogous properties, and in Yucatan the guaco de San Cristóbal, *Ar. pentandra*, Lin., is similarly employed.

In a similar manner are also employed the stems and leaves of different species of *Mikania* (Compositae), namely, *M. Guaco*, Kunth, **guaco de Tabasco** or **de Guatemala**; *M. Houstonis*, **guaco de Veracruz**; and *M. Gonvelada*, **guaco de Tampico**.

Guarana, from the seeds of *Paullinia sorbilis*, Martius. The seeds of the Mexican species *P. barbadensis*, Jacquin; *P. costata*, Schlechtendal, and *P. pinnata*, Lin., may perhaps be made to yield a similar preparation.

Guayabo, *Psidium pomiferum*, L., and *Ps. pyriferum*, L.; Myrtaceae; in hot and moist districts. The bark contains tannin 12.1, sugar and other matters soluble in water 13.8, resin and chlorophyll 1.7, calcium oxalate 30.8 per cent., etc. The root and bark are used as astringents in diarrhea; the leaves as a vulnerary and resolvent, and the fruit as an anthelmintic and aliment.

Habilla de San Ignacio, the seed of *Hura crepitans*, Lin.; Euphorbiaceae; in hot and moist districts. The seeds contain 60 per cent. Of fixed oil, and are used as a drastic in doses of 0.05 to 0.10 Gm. They should not be confounded with **Haba de San Ignacio** or **Cabalonga**, the seeds of *Strychnos Ignatii*.

Hanchinol, *Heimia syphilitica*, De Cand., and *H. salicifolia*, Link; Lythraceae; in the State of Mexico. The leaves contain, according to Alas, fat and chlorophyll 12, extractive and resin 14, bitter principle 9, gum 18, tannin 15, salts 5, tissue 27 per cent.; the resin is stated to be the active portion. The decoction is used as an antisyphilitic, and topically for the cure of ulcers. Alas states that the alcoholic extract is a good hemostatic, and the bitter principle, nessine, has febrifuge properties.

Heno, *Tillandsia usneoides*, Lin.; Bromeliaceae; in the Mexican valley, etc. The plant is used as an astringent. This is the so-called, *long moss* of our Southern States.

Hipericon. Under this name the flowering tops of several species of *Hypericum* are used for their astringent and balsamic properties, namely *H. perforatum*, Lin., var. *mexicanum* (?), *H. denticulatum*, *H. fastigiatum*, *H. formosum*, Humboldt et Bonpland. A composite plant, *Tagetes lucida*, Cav., vulgarly known as **periquillo**, is sometimes used in the place of the former.

Hisopo de México, *Salvia axillaris*, Mociño et Sessé; Labiatae; in Guadalajara, etc. Reputed to possess the properties of hyssop. The leaves are linear-oblong, acute, entire, narrowed at the base, and rough-hairy; the axillary verticils contain 2 to 6 flowers. The plant resembles thyme in aspect, and has an aromatic odor and bitter taste. *Verbena ciliata*, the **alfombrilla silvestre**, which is often substituted for the former, is sufficiently distinguished by being inodorous. *Salvia polystachya*, Ortega, and *Salvia linearis*, Mociño, are also frequently called hyssop.

Hojas de San Pedro, *Daphne salicifolia*, Kunth; Thymelaceae; in the State of Morelos. The leaves are epispastic; the bark might probably be used as a substitute for mezereon.

Huacamote is the starch of *Manihot Aipi*, Pohl.

Huamuchil, *Mimosa Unguis-cati*, Willdenow; Leguminosae; in the hot and moist regions of the eastern slope of the Mexican cordillera. The bark is astringent; the fruit is edible, the juice of the seed produces an abundant secretion of the nose, and the

powder is used for cleaning ulcers from maggots and for cicatrizing old ulcers.

Huanita, *Morelosia (Bourreria) Huanita*, **La Llave et Lexarza**; Boraginaceae; in the State of Michoacan. The bark is used as an antiperiodic and astringent.

Huauzontle, *Blitum (Chenopodium) Bonus-Henricus*, Reichenbach; Chenopodiaceae. The flowering tops are laxative.

Huinar, *Malva scoparia*, Cavanilles; Malvaceae; in temperate districts. The root has considerable reputation in the cure of diarrheas.

Incienso (olibanum), **Ipecacuana blanca** (*Riebardsonia scabra*), **Ipecacuana de las minas de Oro** (*Psychotria emetica*), **Ipecacuana oficial**, **Jaborandi** (*Pilocarpus*), **Jalapa oficial**, **Jalapa macho** (Orizaba root), **Jalapa de Tampico**, **Jaldre** (yellow orpiment), **Jengibre** (ginger), **Jitomate** (tomato; fruit used as an anodyne), **Kamala**, **Lactucario**, **Lanten** (*Plantago major*, etc.), **Laurel** (*Laurus nobilis*), **Lechuga** (lettuce), **Lenteja**, **Lentejilla** or **Panal** (*Lepidium virginicum*, Lin.; in diarrhea), **Licopodio** (lycopodium), **Limon**, **Linaza** (flax seed), **Líquén Carragaheen**, **Líquén de Islandia**, **Lirio de Florencia** (orris root), **Lobelia** (*Lob. inflata*), **Lúpulo** (hops) have all been admitted.

Ipecacuana del pals, *Solea (Hybanthus) verticillata*, Sprengel; Violaceae; on the hills of Santa Fe, west of the capital, etc. Cervantes Vicente found it (the root?) to be a good substitute for the officinal ipecac, if taken in doses double of those of the latter.

Jalapa de Querétaro, *Ipomoea triflora*, Velasco. The root is met with in circular fragments, about 10 Cm. broad and 2 Cm. thick; color gray on the flat, and darker on the convex portions; superficially rough from many gray fibres; odor and taste almost none. M. C. Jimenez ("La Naturaleza," i, 338) obtained from the drug brown extract (aqueous?) 14, resin 16, salts 10.5 per cent., etc. The resin is light yellow, when powdered nearly white, insipid, inodorous, soluble in ammonia with a green-yellow color, partly soluble and partly insoluble in ether. The drug is a drastic purgative; dose of the powder 1 to 2 Gm.; the extract 0.20 to 0.40 Gm.; the resin 0.10 to 0.30 Gm., and the tincture 2 to 4 Gm.

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