

cathartic acid. It has been shown that "*cathartate of ammonia* possesses, in a concentrated form, the purgative activity of the original drug." Two bitter principles have been obtained from senna—*sennacrol* and *sennapicrin*. It contains also a peculiar sugar—*cathartomannite*.

ACTIONS AND USES.—The taste of senna is nauseous and bitter. In infusion—the form in which it is most usually prescribed—it is most disagreeable in odor as well as taste. It produces a sense of warmth in the stomach, and causes much flatulence and griping, which may, however, be prevented by combination with aromatics. Its active principles are absorbed, and the milk of the mother taking senna acquires a purgative property. It is a very efficient cathartic, producing copious liquid stools in about four hours. It does not cause inflammation or hypercatharsis, and its purgative action is not followed by intestinal torpor and constipation. It were, therefore, a very safe and serviceable cathartic, if it were not so disagreeable.

The confection of senna is a palatable preparation, and a mild laxative, operating without any disturbance. It is used chiefly to correct the *constipation of pregnancy*, but it is highly prized by some patients as a remedy for *habitual constipation*. It is also taken to procure soft and easy evacuations in *hæmorrhoids*, *fissures of the anus*, etc. A large bolus (one hundred and twenty grains), taken at bedtime, will operate gently on the following morning. The fluid extract of senna is a form for the administration of this drug more agreeable than the infusion. These two preparations are very excellent cathartics to overcome constipation, especially when ordinary purgatives fail.

The action of senna is much improved by combination with other purgatives, and with aromatics. The well-known "black draught" is an infusion of senna with sulphate of magnesia—one ounce of the latter dissolved in four ounces of the former. By the addition of coffee, the odor and flavor of senna may be rendered more tolerable. Two drachms of senna and one drachm of coffee may be infused in three ounces each of hot milk and boiling water, and the whole drunk after twelve hours.

Rheum.—Rhubarb. The root of *Rheum officinale* Baillon, and of other undetermined species of Rheum (Nat. Ord. *Polygonaceæ*). *Rhubarbe*, Fr.; *Rhabarber*, Ger.

Extractum Rhei.—Extract of rhubarb. Dose, grs. x—grs. xv.

Extractum Rhei Fluidum.—Fluid extract of rhubarb. Dose, ʒ ss—ʒ ij.

Pilulæ Rhei.—Rhubarb-pills. Each pill contains three grains of rhubarb and one grain of soap.

Pilulæ Rhei Compositæ.—Compound pills of rhubarb. (Rhubarb, purified aloes, myrrh.) Dose, 2—4 pills.

Syrupus Rhei.—Sirup of rhubarb. (Fluid extract, ʒ iij; simple sirup, ʒ xxix.) Dose, ʒ ss—ʒ ij.

Tinctura Rhei Aromaticus.—Aromatic tincture of rhubarb. (Rhubarb, cloves, cinnamon, nutmeg.) Dose, ʒ ss—ʒ ij.

Tinctura Rhei.—Tincture of rhubarb. Dose, ʒ j—ʒ ss.

Tinctura Rhei Dulcis.—Sweet tincture of rhubarb. Dose, ʒ ss—ʒ ij.

Vinum Rhei.—Wine of rhubarb. (Rhubarb, calamus, stronger white wine.) Dose, ʒ j—ʒ ss.

Pulvis Rhei Compositus.—Compound powder of rhubarb. Dose, a teaspoonful.

COMPOSITION.—Rhubarb contains a number of substances which have been isolated, but its composition has not yet been accurately determined. It contains two acids, *rheo-tannic* and *rheumic*, a resinous body, *phæoretin*, and *chrysophan*, or *chrysophanic acid*.

PHYSIOLOGICAL ACTIONS.—In small doses, rhubarb is a tonic astringent. It promotes the appetite and the digestive power, and, by virtue of its tannin, is astringent and diminishes peristalsis. As it contains also a purgative principle, in sufficient doses cathartic effects follow its administration. The stools are stained by the coloring-matters of the rhubarb, are of a yellowish-brown color, and are rather soft without being watery. After the purgative action has ended, the astringent constituents assert their power and constipation results. As the stools present an appearance to which the term "bilious" was applied, it was formerly supposed that rhubarb had the power to increase the flow of bile; more recently it has been universally conceded that the coloring-matter of rhubarb produces the peculiar tint referred to. The latest investigations of Rutherford and Vignal have, apparently, very conclusively shown that rhubarb really possesses the property anciently ascribed to it, and that it must be placed among the cholagogue medicines. As it is now known to increase the flow of bile, it may be assumed that the intestinal secretions in general are promoted by it. These effects, which indeed are produced by all the purgatives containing a resin, are probably due to phæoretin—the rhubarb resin.

The coloring-matters of rhubarb stain the perspiration, milk, and urine, and the milk acquires a bitter taste and purgative properties.

THERAPY.—The infusion of rhubarb is frequently employed as a vehicle for the administration of alkalies and mineral acids in *stomachic disorders*. In small doses, the tincture is an excellent *stomachic tonic* in *dyspepsia* with deficient biliary and intestinal secretions. It is adapted to those of a relaxed habit, and is inadmissible when a hyperæmia of the mucous membrane exists.

Rhubarb is a remedy of the greatest utility in the *duodenal catarrh*, and in the *catarrh of the biliary ducts with jaundice*, as these maladies occur in children. The passing of whitish, pasty, or clay-colored stools,

while the skin presents an earthy or jaundiced hue, is the indication for the use of rhubarb. It is true that the stools will be quickly stained, so as to present the bilious character, without any improvement having necessarily taken place in the local malady; but it is also true that rhubarb is curative in the conditions above described. In the *summer diarrhoea* of children, no remedy is more generally prescribed. The aromatic sirup of rhubarb is a pleasant form in which to administer it. In this disorder, especially if the motions are sour, alkalies should be prescribed with the rhubarb. Magnesia, chalk, or sodium carbonate, may be given with the powder of rhubarb, the fluid extract, or the sirup. The following is an excellent formula in these cases: ℞ Infus. rhei, ℥ iij; potassii bicarb., ʒ j; tinct. cinnamomi, ʒ ij; syr. simplicis, ʒ vj. M. Sig.: *A teaspoonful every hour or two in cholera infantum.* *Diarrhoea* in children or adults, due to the presence of undigested food, or retained irritating secretions, may not unfrequently be cured by a purgative dose of some rhubarb preparation. After the purgative effect is expended, the bowels are confined by the astringent. In acute dysentery the saline purgatives are much more appropriate than rhubarb.

In *habitual constipation* good effects may be obtained by chewing some rhubarb-root. The astringent after-effect is, however, a decided objection to the frequent use of this remedy for this purpose. In the rhubarb-pill the astringency is counteracted by soap. The compound rhubarb-pill, which contains aloes, is a mild and efficient cathartic.

Aloe.—Aloes. The inspissated juice of the leaves of *Aloe Socotrina* Lamarek (Nat. Ord. *Liliaceae*).

Aloe Purificata.—Purified aloes. In brittle pieces of a dull-brown or reddish-brown color, and having the peculiar aromatic odor of Socotrine aloes. It is almost entirely soluble in alcohol. (U. S. P.) Dose, gr. j—grs. v.

Extractum Aloës Aquosum.—Watery extract of aloes. Dose, gr. ss—gr. v.

Pilula Aloës.—Pills of aloes. Each pill contains two grains of aloes and two grains of soap. Dose, 1—5 pills.

Pilula Aloës et Asafœtidæ.—Pills of aloes and asafœtidæ. (Aloes, asafœtidæ, and soap, in equal parts.) Dose, 2—5 pills.

Pilula Aloës et Mastiches.—Pills of aloes and mastic. Lady Webster's pills. (Aloes, mastic, and red rose.) Dose, 1—2 pills.

Pilula Aloës et Myrrhæ.—Pills of aloes and myrrh. (Aromatic powder, myrrh, aloes.) Dose, grs. v—grs. xv.

Tinctura Aloës.—Tincture of aloes. Dose, ʒ ss—ʒ j.

Tinctura Aloës et Myrrhæ.—Tincture of aloes and myrrh. Dose, ʒ ss—ʒ ij.

Vinum Aloës.—Wine of aloes. Dose, ʒ j—ʒ ss.

Pulvis Aloës et Canellæ.—Powder of aloes and canella (*hierapicra*). Dose, grs. v—ʒ j. (Not official.)

COMPOSITION.—The odor of aloes is due to a peculiar *volatile oil*. It contains also a *resin*, and a principle, *aloïne*. The composition of aloïne is not precisely the same in the different varieties of aloes. The Barbadoes aloes furnishes *barbaloïne*, the Natal aloes, *nataloïne*, and the Socotrine aloes, *soaloïne*. These varieties, it is supposed, constitute an homologous series.

ACTIONS AND USES.—Aloes has a bitter and very disagreeable taste, leaving a rather acrid after-sensation in the fauces. It is a stomachic tonic, and, like bitters in general, it promotes the appetite and digestion. Accordingly, it is much prescribed as a stomachic tonic in cases of *indigestion with torpor of the large intestine*. Irritable or inflammatory states of the stomach mucous membrane contraindicate its employment.

The recent investigations of Rutherford and Vignal have shown that aloes has the power to stimulate the hepatic functions, and to promote the flow of bile. This result is confirmatory of clinical experience. In large doses (twenty grains or more) aloes undoubtedly increases the intestinal secretions generally; but, in the ordinary medicinal laxative dose, the stools are not liquid, and are but little altered in character. The principal effect of aloes is expended on the large intestine, the peristaltic movement of which it increases. Some tormina is experienced when the laxative effect begins, and tenesmus, with heat and irritation of the rectum, is produced when an active purgative dose has been taken. The blood-supply to the pelvic organs is increased by aloes; the menstrual flow becomes more abundant, and abortion, it is said, may be caused by its incautious administration; while in the male, erections take place more frequently.

Ten or twelve hours elapse after it has been swallowed, before cathartic effects are produced. The rate at which it moves to affect the intestinal canal is influenced less by the size of the dose than by the condition of the bowels.

The purgative principle of aloes diffuses into the blood. Applied to an exposed surface, it is absorbed and purges, and the milk of mothers taking it acquires a purgative action.

Simple *jaundice*, of an atonic kind, may be cured by aloes. No purgative is more efficient in *constipation*, dependent on weakness and impaired contractility of the muscular layer of the large intestine. Jaundice, or at least a bilious state, a coated tongue, foul breath, a tumid abdomen, and an impacted colon, are conditions frequently associated and are readily relieved by aloes. The constipation of *hypochondriasis* and *melancholia* is best overcome by the use of this agent, and, with the removal of the impacted fæces, there is not un-

frequently an improvement in the mental state. Aloes is prescribed in *cerebral disorders*, when purgatives are given with a view to a derivative effect.

In *amenorrhœa* which is dependent on anæmia, aloes is prescribed, with other appropriate remedies, to determine an afflux of blood to the uterine system. *Menorrhagia*, occurring in debilitated and relaxed subjects, is sometimes relieved in the same way. Iron may be associated with aloes in these cases. Congestion of the pelvic viscera is a contraindication to the use of aloes, and the existence of hæmorrhoids, or of a tendency therefor, has heretofore been considered an equally positive contraindication. Fordyce Barker has, however, shown that aloes has a curative power in certain cases of *hæmorrhoids*, and notably those which occur after delivery. The local condition, under these circumstances, is not one of active hyperæmia, but really consists in a sluggish state of the circulation in the inferior hæmorrhoidal veins. It can hardly be doubted that aloes would increase the trouble if prescribed for cases in which there was active congestion of the pelvic viscera. Barker also advocates the use of aloes in non-puerperal *hæmorrhoids*, but the local condition must be suitable for the use of this remedy or the disease will be aggravated. The following are formulæ proposed by Barker: ℞ Pulv. aloës Soc., sapo. Cast., āā ℥j; ext. hyoscyami, ʒss; pulv. ipecacuanhæ, grs. v. M. Ft. pil. no. xx. Sig.: *One pill morning and evening.* When the hæmorrhoids are associated with an irritable rectum, and with frequent, small, teasing, thin evacuations, Barker substitutes for the hyoscyamus a small quantity of opium, giving also a less quantity of the aloes, as in the following formula: ℞ Ferri sulph., ℥j; pulv. aloës Soc., ext. opii aq., sapo. Cast., āā grs. x. M. Ft. pil. no. xx. Sig.: *One pill morning and evening.* Oppolzer also used aloes as a remedy for hæmorrhoids, prescribing, when there was constipation, aloes and quinine, and, when the bowels were not confined, aloes and sulphate of iron.

The action of aloes, as well as of other resin-bearing purgatives, in the condition of anæmia, is promoted by the conjoined use of the bitters, quinine, iron, and tonics generally. Two grains of aloes, taken at bedtime, will cause a satisfactory evacuation on the following day. Combination with soap, as in the official pil. aloës, and pil. aloës et asafœtidæ, diminishes the drastic, while it increases the efficiency of the purgative, action. It is generally better to give aloes by itself, without combination with other cathartics; but its purgative effects may be greatly enhanced by administering a saline laxative six or eight hours after the aloes has been taken.

A *gonorrhœa* may, it is said, be cured by the internal use, three times a day, of a pill containing two or three grains of aloes. *Catarrh of the uterus* has been treated successfully by aloes rectal enemata. The tincture of aloes, diluted to one half or even more, by water, is a

very effective injection in gonorrhœa after the acute symptoms have subsided.

Jalapa.—Jalap. The tuber of *Exogonium purga* Bentham (Nat. Ord. *Convolvulaceæ*). *Racine de jalap*, Fr.; *Jalape*, Ger.

Abstractum Jalapæ.—Abstract of jalap. Dose, gr. j—gr. v.

Resina Jalapæ.—Resin of jalap. Dose, grs. ij—grs. v.

Pulvis Jalapæ Compositus.—Compound powder of jalap. (Jalap, one part; bitart. of potassa, two parts.) Dose, gr. x—3 j.

COMPOSITION.—Jalap contains a *resin*, to which its purgative property is due. The resin consists of two varieties, one soluble, the other insoluble, in ether. The latter has been named *convolvulin*, or *jalap-in*, and is the more active purgative of the two. Various secondary products of considerable interest are obtained from the resin, but these possess no special importance from the therapeutical point of view.

PHYSIOLOGICAL ACTIONS.—As a cathartic jalap resembles, but it is much more active than, senna. It is apt to produce nausea, and tormina and tenesmus invariably accompany its purgative action. It usually operates in from two to four hours, but the rate at which it moves to affect the intestinal canal is not influenced by the amount administered. The stools are soft at first, and afterward liquid. Jalap does not produce hæmorrhoids, nor does it cause a tendency to, or increase an existing, menorrhagia. The secretions of the intestinal canal are increased by it, and the recent researches of Rutherford and Vignal have demonstrated that jalapin (convolvulin) excites the flow of bile.

The action of jalap appears to be local. It is true that experiments in support of a contrary opinion have been made; but, in the conclusive test of the intra-venous injection of convolvulin, no purgative action has followed (Husemann).

THERAPY.—The resin of jalap being the active constituent, it should generally be preferred. It has the merit of being almost tasteless, and hence may be given readily to children.

Jalap is an efficient cathartic in the beginning of *fevers, inflammations*, and *acute diseases* requiring the use of such therapeutic means. Formerly calomel and jalap were much prescribed, but this combination has deservedly fallen into discredit. Occasionally the resin and calomel, in less ponderous doses than formerly given, may be used with advantage as a cathartic: ℞ Resinæ jalapæ, hydrarg. chlor. mit., ext. hyoscyami, āā gr. j. M. Ft. pil. no. j. Sig.: *Take at bedtime.*

As jalap in sufficient quantity causes free watery evacuations, it is a suitable purgative in *anasarca* and *ascites*. The most generally approved hydragogue purgative, under these circumstances, is the compound jalap-powder. The efficiency of this may be increased by the addition of podophyllum. A teaspoonful of the compound powder,

taken in the early morning, will usually produce several very copious, watery stools. Increased urinary discharge also is a not unfrequent result of its action.

Jalap has the power to cause the expulsion of *lumbrici*. As a vermifuge it is not at all equal to the other approved remedies, but it is certainly useful as an adjunct. For example, santonin at night, and the resin of jalap and calomel on the following morning, is an effective method of expelling these parasites.

Jalap is, of course, contraindicated in inflammatory states of the intestinal canal. In overdoses it causes hypercatharsis, and it may excite violent gastro-enteritis and endanger life. With proper attention to the conditions in which it is admissible, and to the dosage, jalap is entirely safe, and is a very certain and efficient cathartic. An excellent vehicle for the administration of the resin of jalap is the sirup of rhubarb. ℞ Resinæ jalapæ, grs. ij—grs. v; syr. rhei aromat., ℥ ss. M. This is especially suitable for children.

Scammonium.—Scammony. A resinous exudation from the root of *Convolvulus scammonia* Linné (Nat. Ord. *Convolvulaceæ*). (U. S. P.) *Scammonée*, Fr.; *Scammonium*, Ger.

Resina Scammonii.—Resin of scammony. Dose, grs. v—grs. x.

COMPOSITION.—The activity of scammony, as a cathartic, depends entirely on the resin which it contains. As the crude scammony is much adulterated, the resin is alone worthy of confidence.

ACTIONS AND USES.—Scammony corresponds very closely to jalap in the time it requires to cause cathartic action, in the character of the stools produced, and in the kind of irritation which it excites. Scammony is somewhat more drastic than jalap. As it has but little taste, and is at the same time very active, the resin is much prescribed by English practitioners as a cathartic for children. It may be given rubbed up with milk, or with sirup of rhubarb. It is adapted to the same class of cases, and to the relief of the same conditions, as jalap.

Colocynthis.—Colocynth. The fruit, deprived of its rind, of *Citrullus colocynthis* Schrader (Nat. Ord. *Cucurbitaceæ*). (U. S. P.) *Coloquinte*, Fr.; *Koloquinten*, Ger.

Extractum Colocynthis.—Extract of colocynth.

Extractum Colocynthis Compositum.—Compound extract of colocynth. (Extracts of colocynth, scammony, and aloes; cardamoms, soap.) Dose, grs. v—grs. x.

Pilule Cathartice Compositæ.—Compound cathartic pills. (Compound extract of colocynth, abstract of jalap, calomel, gamboge.) Dose, 1—3 pills. Each pill contains one grain of calomel.

COMPOSITION.—Colocynth contains a bitter principle (*colocynthin*), which is the purgative principle. *Colocynthin* is another substance

contained in the alcoholic extract. It differs from colocynthin in being soluble in ether, and not in water. As colocynthin is a tasteless crystalline powder, it is probably devoid of purgative property. Colocynthin is a very powerful cathartic.

ACTIONS AND USES.—Colocynth is a gastro-intestinal irritant. In moderate doses it hastens the peristaltic movements, and increases the intestinal secretions. Its cathartic operation is usually attended with griping, and the stools are fluid. Violent gastro-enteritis may be produced by a large quantity, and numerous fatal cases have been reported from its incautious or criminal administration.

The action of colocynth is not merely local. Applied to the skin of the abdomen, it causes intestinal pain, and more frequent alvine discharges.

Colocynth is never administered alone, but usually in combination with other purgatives. The compound extract is a safe, effective, and not unpleasant cathartic for the relief of *constipation*. ℞ Ext. colocynthis comp., ℥ j; ext. belladonnæ, ext. physostigmatis, āā grs. v. M. Ft. pil. no. x. Sig.: *One each night in habitual constipation*. The official compound cathartic pill is a most serviceable combination. Instead of calomel the resin of podophyllum may be used in the preparation of this pill, without impairing its utility.

In *cerebral congestion* the preparations of colocynth are used as derivative purgatives. *Hypochondriasis* and *melancholia*, when associated with torpor of the large intestines and fecal accumulations, are benefited by brisk purging with the colocynth preparations, but other drastic purgatives are equally efficient.

Colocynth is inadmissible in inflammatory states of the intestinal canal, and is unsafe during the existence of pregnancy. There is a popular notion, which has led to its use in toxic doses, that colocynth may cause abortion. Any quantity which will affect the gravid womb must be sufficient to endanger life.

Podophyllum.—May-apple. The rhizoma and rootlets of *Podophyllum peltatum* Linné (Nat. Ord. *Berberidaceæ*). (U. S. P.)

Resina Podophylli.—Resin of podophyllum. Dose, gr. ¼—gr. j.

Extractum Podophylli.—Extract of podophyllum. Dose, grs. v—grs. x.

Abstractum Podophylli.—Abstract of podophyllum. Dose, gr. ¼—gr. j.

Extractum Podophylli Fluidum.—Fluid extract of podophyllum. Dose, ℥ j—3 ss.

COMPOSITION.—The medicinal qualities of podophyllum are due to a resin, or to two resinous substances, one soluble in alcohol and ether, and the other soluble in alcohol only. Both possess purgative properties. May-apple-root contains the alkaloid *berberine*, which, however,

is not peculiar to podophyllum, being found in berberis, hydrastis, and other plants.

Resina podophylli is the preparation entitled "podophyllin" by the eclectic practitioners.

ACTIONS AND USES.—The taste of podophyllum is bitter, with an after-sense of acidity. It increases the intestinal secretions, and is actively cathartic, producing copious and rather watery stools. Its action is similar to, but considerably slower than, that of jalap. From six to ten hours elapse after its administration before cathartic effects are experienced. Taken by itself, it is apt to cause nausea and griping, but in combination with other cathartics, or with belladonna or hyoscyamus, it operates pleasantly as well as efficiently. The Edinburgh committee, Dr. Bennett, chairman, ascertained, as they supposed, that the resin of podophyllum has no cholagogue action, but the more recent as well as the more accurately conducted experiments of Rutherford and Vignal have apparently demonstrated that it decidedly increases the flow of bile, corresponding in this particular to the other resinous cathartics.

Podophyllum-resin is the most generally useful cathartic in cases of *constipation*, in which the secretions of the glandular apparatus of the intestinal canal, and of the liver, are deficient. *Habitual constipation*, due to torpor of the muscular layer of the bowel, may, it is said, be removed by the nightly use of a small dose of the resin combined with belladonna. ℞ Resinæ podophylli, grs. vj; ext. belladonnæ, ext. physostigmatis, āā grs. iij. M. Ft. pil. no. xij. Sig.: *One pill each night*. It is especially in *congestion of the portal circulation*, in *catarrhal* and *malarial jaundice*, and in *ascites*, that podophyllum-resin acts most efficiently and serviceably. *Hæmorrhoids* that bleed in consequence of stasis in the portal circulation, and that are of recent formation, may sometimes be cured by a brisk podophyllum cathartic.

The clinical experience which had shown that the resin of podophyllum possessed cholagogue powers, long before the experimental inquiry was instituted to settle the question, led also to a wide generalization in the therapeutical uses of this agent. Acting on the liver, it was assumed that, in a manner similar to mercury, it must also possess similar "alterative" powers. It came to be used as the "vegetable calomel," in the diseases in the treatment of which mercury was supposed to be essential. It need hardly be asserted that these speculations have no basis, and that podophyllum possesses no property in common with mercury except its power to purge.

Leptandra.—Leptandra. The rhizoma and rootlets of *Leptandra Virginica* Nuttall (Nat. Ord. *Scrophulariaceæ*). (U. S. P.)

Extractum Leptandræ.—Extract of leptandra. Dose, gr. ij—gr. x.

Extractum Leptandræ Fluidum.—Fluid extract of leptandra. Dose, ℥ v—3 j.

COMPOSITION.—A crystallizable principle has been obtained from the root—*leptandrin* (?). It contains also a *resin* which, in the impure form at present found in commerce, has a distinctly purgative quality and is known as *leptandrin*. The dose of this preparation is gr. ij—gr. v.

ACTIONS AND USES.—Leptandra is an active cathartic in the recent state. In the form of the fluid extract, or of the so-called leptandrin, it acts mildly, causing somewhat liquid and apparently bilious stools. It is held to be cholagogue, and, according to the rules of analogy, this claim may be well founded, for other cathartics containing resin, as the experiments of Rutherford and Vignal have shown, possess the power to increase the flow of bile.

It is applicable to cases of disease of the intestinal canal, attended by constipation, in which the biliary and intestinal secretions are insufficient.

Iris.—Blue flag. The rhizoma and rootlets of *Iris versicolor* Linné (Nat. Ord. *Iridaceæ*). (U. S. P.)

Extractum Iridis.—Extract of iris. Dose, gr. j—gr. v.

Extractum Iridis Fluidum.—Fluid extract of iris. Dose, ℥ v—3 j.

Under the name *iridin*, there is to be found in the shops a "resinoid," having more or less of the properties of the crude drug. The dose of this preparation is from one to five grains.

ACTIONS AND USES.—*Iris versicolor* has a bitter, nauseous, and rather acrid taste. It is apt to cause severe nausea. The fresh root has actively purgative and diuretic qualities, but these are impaired by age. The fluid extract and the "iridin" are laxative, and are supposed to have cholagogue powers.

The oleo-resin is prescribed in *hepatic* and *intestinal disorders*, and in *dropsy*. There is much evidence tending to show that this remedy is really serviceable when the stools are clay-colored, and the skin jaundiced, in consequence of duodenal catarrh and obstruction of the biliary ducts. It is said that *malarial jaundice* may be cured by this drug, and that in *bilious remittent fever* and in *chronic malarial poisoning* it exerts a favorable influence.

Euonymus.—Wahoo. The bark of *Euonymus atropurpureus* Jacquin (Nat. Ord. *Celastraceæ*). (U. S. P.)

Extractum Euonymi.—Extract of euonymus. Dose, gr. j—gr. v.

The eclectic preparation (euonymin) consists of the resin and fixed oil, and is prescribed in the dose of a half-grain to five grains.

COMPOSITION.—An uncrystallizable and intensely bitter principle

has been isolated (*euonymin*). It contains also a crystallizable, a yellow and a brown resin, fixed oil, etc.

ACTIONS AND USES.—Euonymus possesses cathartic properties similar to rhubarb, but is much milder, and is an excellent remedy in hepatic and intestinal disorders requiring the use of such an agent. The eclectic preparation (*euonymin*) is a convenient form in which to procure the cathartic action of euonymus. Rutherford has shown that it is a highly efficient cholagogue.

Baptisia.—Wild indigo. The root-bark of *Baptisia tinctoria*. (Not official.) Preparations corresponding to those of iris and euonymus can be obtained.

Extractum Baptisiae.—Extract of baptisia. Dose, gr. j—gr. x.

Baptisin, the resinoid, is much prescribed by eclectic practitioners. The dose is one to five grains.

ACTIONS AND USES.—The taste of baptisia is bitter and somewhat acrid. It increases the secretions of the glandular appendages of the gastro-intestinal mucous membrane. It possesses in large doses emetocathartic property, and may indeed excite violent gastro-intestinal inflammation; in small doses it is merely laxative. The resinoid *baptisin*, so called, has been studied by Rutherford, who found it to possess active cholagogue property. Given to dogs, it distinctly stimulates the hepatic functions and increases the production of bile. It is probable that it deserves to rank among the most efficient of the remedies of this group. It is indicated, therefore, in all the cases in which hepatic stimulants are desirable.

HYDRAGOGUE CATHARTICS.

Cambogia.—Gamboge. A gum-resin obtained from the *Garcinia Hanburii* Hooker filius (Nat. Ord. *Guttiferæ*). (U. S. P.) *Gomme-gutte*, Fr.; *Gummigutt*, Ger. Dose, gr. j—grs. v.

The only official preparation is the compound cathartic pill, of which gamboge constitutes about a tenth part.

COMPOSITION.—Gamboge is a mixture of resin and gum, the latter constituting from fifteen to twenty per cent.

ACTIONS AND USES.—Gamboge has no taste at first, but, when chewed, an acrid sensation is developed in the mouth. It is irritant to the gastro-intestinal canal, increases secretion of the glands, excites vomiting and intestinal pain, and purges violently, producing copious watery stools. The experiments of Rutherford and Vignal show that gamboge is not an hepatic stimulant, but does cause hydrocatharsis. Violent gastro-enteritis is set up by large doses, yet but few fatal cases have been reported. As vomiting soon follows the ingestion of a large dose, this fact may explain the rarity of a fatal result due to its administration.

Gamboge is rarely prescribed alone as a cathartic, owing to the violence and harshness of its operation. Combination with other cathartics, as in the compound cathartic pill, greatly modifies its action. As it is a powerful hydragogue cathartic, it is given with advantage in *dropsy*, when hydrocatharsis is indicated. It is best administered in small doses, at short intervals, rubbed up with sugar or made into a pill with soap. Besides its purgative properties, gamboge is decidedly *diuretic*. In order to obtain its diuretic effects it must be given in small doses, at short intervals, and vomiting must be avoided. Administered in solution with an alkaline diuretic, its efficiency is much increased. Gamboge has also been used as an *anthelmintic*, but it has no powers in this respect not possessed by other drastic purgatives.

Oleum Tiglii.—Croton-oil. A fixed oil expressed from the seeds of *Croton tiglium* Linné (Nat. Ord. *Euphorbiaceæ*). (U. S. P.) *Huile de Croton*, Fr.; *Crotonöl*, Ger. Dose, gt. j—gtt. ij.

COMPOSITION.—It contains glycerides of the fatty acid series—stearic, palmitic, myristic, and lauric acids—and the more volatile acids, acetic, butyric, and valerianic (Flückiger and Hanbury, Husemann). Genther and Fröhlic have discovered a peculiar volatile acid, to which they have applied the name *tiglinic acid*. By the same chemists the so-called *crotonic acid* is held to be an artificial product. Schlippe has asserted the discovery of the vesicating principle of croton-oil, but other chemists have failed to find this substance, to which he has assigned the name of *crotonol*. The purgative principle of the oil appears to exist in all parts of the *Croton tiglium*, but it has not yet been isolated.

ACTIONS AND USES.—Croton-oil is a transparent or semitransparent viscid liquid, amber-colored, and having a rather rancid smell, and an oily, acrid taste. Applied by friction to the skin, it excites inflammation, and causes an eruption which is at first papular, with rounded summits, and afterward becoming pustular. The eruption is sometimes umbilicated, but is generally rounded. An areola surrounds the pustules, and there are considerable heat and burning in the part. The eruption appears in a few hours after the frictions have been practiced, reaches its maximum in about four days, and then declines by abortion of the pustules and by scabbing. In many subjects permanent, small white cicatrices mark the site of the eruption. All subjects are not equally susceptible to the vesicating action of croton-oil.

The mucous membrane is violently attacked by croton-oil. In the fauces it causes an intensely acrid sensation, and increases the flow of saliva. A sense of heat, pain, and nausea is produced when the oil is received into the stomach, tormina soon follows, and in an hour or two watery stools are passed with some burning and irritation about the anus. The action of the oil continues during the succeeding twelve