true odour on a fresh surface, and its own peculiar, less balsamic, and somewhat terebinthine taste. Tears of different kinds of gum are also met with as adulterations. These are easily known by the transparency of a fresh fracture, and the total absence of the proper odour.——Dr. Pereira describes two inferior kinds of myrrh not unfrequently met with in commerce, which he calls Second Myrrh, and Third or East-Indian Myrrh. The former is in small tears seldom bigger than a pepper-corn, varying in colour from pale-yellow to reddish-brown, and composed of true myrrh intermixed with gum Arabic and a sort of resih. The latter,—whose name, though once appropriate, is now inexact, when all qualities may alike come by way of the East-Indies,—seems to consist of the coarser pieces of Turkey myrrh with many impurities.

Actions and Uses.—Myrrh is a heating stimulant. It promotes digestion, accelerates the pulse, and raises the animal temperature. Large doses might cause inflammation. It is a mild diaphoretic. It is not, like the fetid gum-resins, an antispasmodic. On account of its stimulant action on the stomach, it is used in torpid states both of that organ and of the intestines. It has been highly esteemed as an emmenagogue in disturbed menstruation and chlorosis, but in that respect it is not now in much repute. It is supposed to partake, with copaiva and other oleo-resinous substances, in the property of arresting chronic gonorrhœa, chronic catarrh, and other excessive mucous discharges. It is one of the drugs which have in succession had their day as approved remedies for pulmonary consumption; and it formed part of two celebrated nostrums for that disease, called Griffith's Pill and Griffith's Mixture, for which the *Pilula* and *Mistura ferri composita* are substitutes. It is now less used internally than externally, for local objects. It is a good application to indolent sores, gangrenous ulcers, and aphthous or sloughy sore-throat; and both the powder and tincture are approved dentifrices for cleansing the teeth and consolidating the gums.

The doses of its preparations are: *Myrrha*, gr. x. ad gr. xxx.—*Tinctura myrrhæ*, fl. dr. i. ad fl. dr. ii.

MYRTUS PIMENTA, *D.* See *Pimenta.*

NICOTIANA TABACUM, *D.* See *Tabacum.*

NUX-VOMICA, *U.S., E. L. D.* *Seeds of Strychnos Nux-vomica, L. W. Spr.* *Nux-vomica.*

EXTRACTUM NUCIS VOMICÆ, U.S. E. D. *Extract of Nux Vomica.*

PROCESS, *U.S. Edin.* Take of Nux-vomica any convenient quantity; expose it in a proper vessel to steam until it is completely softened; slice it, dry it thoroughly, and grind it in a coffee-mill (grind it to powder, *U.S.*); exhaust the powder either by percolating it with rectified spirit, or by boiling it with repeated portions of rectified spirit, till the spirit comes off free of bitterness (by displacement, *U.S.*). Distil off the greater part of the spirit; and evaporate what remains to a proper consistence in the vapour-bath.

PROCESS, *Dub.* Take of
Nux-vomica rasped eight ounces;
Proof spirit two pints.
Digest for three days in a close vessel; filter the liquor, and express the residue. Digest the residuum for three days in a pint and a-half of proof spirit; filter and express again. Distil the tinctures to a fourth, and concentrate to the due consistence.

TINCTURA NUCIS VOMICÆ, D. *Tincture of Nux Vomica.*

PROCESS, *Dub.* Take of
Nux-vomica rasped two ounces;
Rectified spirit eight ounces.
Macerate for seven days, and strain.

STRYCHNIA. See *Strychnia.*

FOR. NAMES.—*Fr.* Noix-vomique.—*Ital.* Noce-vomica.—*Span.* Nuez vomica; Mataperros.—*Port.* Noz vomica.—*Ger.* Krähenauge; Brechnuss.—*Dut.* Braaknooten.—*Swed.* Räfkaka.—*Dan.* Krandsöine.—*Russ.* Tschilibucha; Kutscheliaba.—*Arab.* Khanek-ulkelb.—*Tam.* Yettie Cottay.—*Hind.* Koochila.

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FIGURES of Strychnos Nux-vomica in Hayne, i. 19.—Nees von E. 209.—Roxb. Cor. Pl. i. 24.—Steph. and Ch. ii. 52.—Roque, 81.—Carson, Illust. 58.

NUX-VOMICA is not mentioned by any Greek or Roman author, but was known to the Arabian physicians. It has been used immemorially in medicine by the natives of Hindostan. In modern European medicine it was little known till very lately, although it has long been a familiar substance as a bitter narcotic for the adulteration of beer.

Natural History.—The *Strychnos Nux-vomica*, which produces it, is a species of the Natural family *Strychneæ* of Decandolle, which Lindley includes with the *Apocynaceæ*. It belongs to the Linnæan class and order *Pentandria Monogynia*. It inhabits the Indian continent and islands, and abounds particularly on the Malabar and Coromandel coasts. It is a considerable tree, with a short crooked stem,—a grayish, shining bark, covered for the most part with gray tubercles, or with an ochrey efflorescence,—a white tough wood,—oval, shining, leathery leaves,—and small, greenish-white clustered flowers. The fruit, which is of the size and appearance of an orange, is a berry, composed of a leathery, dingy-orange-red tegument, and a juicy mucilaginous pulp, in which are imbedded from two to five seeds. The seeds, the officinal part of the plant, are circular and flat, towards an inch in diameter, and two lines in thickness, umbilicated at one surface, everywhere thickly beset with short, brown, satiny hairs, and internally translucent; exceedingly tough, and almost horny. Every part of the plant except the pulp of the fruit is intensely bitter, but especially the seeds and the bark.

Chemical History.—Nux-vomica seeds are with difficulty reduced to a state of fine division. The simplest method is that of the Edinburgh (and U.S.) Pharmacopœia, which directs them to be softened well with steam, and then sliced, dried and ground. The powder has a grayish-yellow colour, a faint, sweet odour, and an intense, durable, bitter taste. Water, proof-spirit, and rectified-spirit, dissolve the bitter active ingredients; and the last solvent acts most energetically. Ether removes chiefly a concrete oil and some wax. Nitric acid renders the powder orange-red. The watery decoction is pale grayish-yellow, and intensely bitter. It is turned orange-yellow by nitric acid, and emerald-green by sesquichloride of iron. When concentrated, it yields with alkalis a grayish-white precipitate, which is most intensely bitter, and presents alkaline properties,—being, in fact, a mixture of two alkaloidal principles.—As spirit acts more powerfully than water on powder of nux-vomica, it is preferred by the Pharmacopœias for making the officinal *Extractum* and *Tinctura nucis vomicæ*. The directions of the Edinburgh College for making the extract are the most precise. When well prepared, it may be known from all other extracts by its most intense, pure, durable bitter taste, and by nitric acid turning its watery solution yellow. Nux-vomica, according to the analysis of Pelletier and Caventou, consists of concrete oil, wax, yellow colouring matter, soluble gum, starch, lignin, a peculiar acid named igasuric acid, and two peculiar alkaloids, to which the seed owes its action on the animal body, and which constitute little more than four parts by weight in one thousand.—Of these alkaloids, which are called Strychnia and Brucia, the former is by much the more energetic. Their properties will be found particularly noticed under the article Strychnia.

Adulterations.—Nux-vomica in powder is much subject to adulteration, chiefly because foreign substances are mixed with it to facilitate pulverization. Common salt, which is said to be a frequent admixture, is easily discovered by lixiviating the powder with cold water, and obtaining the salt by evaporation and crystallization.

The seed is not the only product of the nux-vomica tree which is known in European medicine. Both the wood, under the name of Snake-wood, or

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Lignum colubrinum, and the bark, under the erroneous designation of False-Angustura Bark, have attracted some attention in the western part of the Old World. Snake-wood, a remedy once in use as a febrifuge, anthelmintic, and antidote to snake-poison, is generally referred to a different species, the *Strychnos colubrina*, but is often nothing else than nux-vomica wood. The bark deserves more particular notice. It is well known that soon after the beginning of the present century, fatal accidents repeatedly occurred on the continent, in consequence of druggists having mistaken for Angustura-bark, a poisonous bark, which was supposed to be that of an Abyssinian tree, the *Brucea ferruginea*. This bark having been analyzed by Pelletier and Caventou about the same time with nux-vomica seeds, they found in the former an alkaloid which was identical with one of those discovered in the latter, and which they termed brucin or brucia. But the reference of this poisonous bark to the Abyssinian plant was a mistake. Some years ago, I ascertained that French specimens in my possession under the name of False-Angustura bark, were identical in their characters with specimens of nux-vomica bark sent to me from Calcutta by Dr. Jackson; and about the same time, Dr. O'Shaughnessy of Calcutta found both strychnia and brucia in nux-vomica bark,—a result which I have since confirmed. Nux-vomica bark presents two distinct appearances,—some pieces being on their outer surface grayish-green, or grayish-yellow, mottled with numerous paler-gray tubercles,—others, and these the larger pieces, being pretty uniformly covered with a friable rusty-coloured efflorescence. Both varieties are intensely bitter. The rusty efflorescence is turned deep greenish-black with nitric acid; and the same reagent applied to a transverse section of either variety, strikes a dark-orange colour. Infusion of galls causes a grayish-white precipitate in its decoction. These characters, when compared with those mentioned under the article *Cusparia*, will be found to be quite different from what are presented by true Angustura-bark. —From some trials, it appears to me probable that nux-vomica bark might be advantageously substituted for the seeds, in the preparation of strychnia.

Actions and Uses.—The actions of nux-vomica will be stated more particularly under the head of its active principle strychnia, with which it exactly coincides, and which is now commonly employed instead of it. It is a powerful narcotic, of that limited class which act almost entirely on the spinal column, producing in poisonous doses, violent tetanic convulsions without impairing the functions of the brain. Two drachms of the powder have proved fatal in two hours, and even fifteen grains have caused death (Traill). Those who recover from the primary effects on the nervous system may suffer from irritation in the alimentary canal; and an instance is on record of death being thus apparently produced in three days by three grains of the spirituous extract. Nux-vomica is chiefly used on account of its stimulant action on the nervous system in cases of chronic palsy, both general and partial. It is now almost confined to this disease; but in earlier modern physic it was esteemed by many as a febrifuge in intermittents, as an astringent in dysentery, and as a specific sedative in gout and rheumatism.—There seems no particular reason why the powder and extract should have been displaced by the principle strychnia. For their effects are precisely the same; and the principle is not only troublesome to prepare, but likewise, being seldom pure, is liable to the objection of irregular strength, which is brought against the galenical preparations of the drug. On account of the taste of these preparations, they ought to be given in the shape of pill; and for the like reason the Dublin tincture is an inconvenient form.

The doses of the preparations of nux-vomica are; *Nucis-vomicæ pulvis*, gr. v. ad gr. xv.—*Extractum nucis-vomicæ*, U. S. E. D. gr. ss. ad gr. iii. *Tinctura nucis-vomicæ*, D. min. xxx. ad fl. dr. i.

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OLEA. See *Olivæ Oleum.*

OLEUM ÆTHEREUM, *D.* See *Æther sulphuricus.*

[OLEUM BUBULUM, *U.S.* *The oil prepared from the bones of Bos domesticus.*

For. Names.—*Fr.* Huile de pied de bœuf.—*Ger.* Ochsenfussefett; Klauenfett.—*Swed.* Klæffett.

Neat's-foot oil is the product of a long continued boiling of the feet of the ox, the skin and hoof having been previously removed. Much inferior fat and oil rise to the surface; these are removed and again placed in fresh water, which is heated nearly to 212°. After standing for some time various impurities settle at the bottom, and the oil is taken from the surface; it is further purified, if necessary, by being introduced into water and kept at such a temperature for twenty-four hours as will permit the fat that remains mixed with the oil to separate from it; on the cooling of the liquid, the fat concretes into a mass, and the oil remains in the state of a thin fluid; this is then to be filtered through small pieces of charcoal, free from powder.

It is in this state, a yellowish, inodorous and bland liquid, but in general it retains both a disagreeable odour and taste. It is acted on very slightly by cold, remaining fluid at very low temperatures. It is officinal for one purpose only, the preparation of the ointment of the nitrate of mercury or citrine ointment.]

OLIBANUM, *L. D.* *Gum-resin of Boswellia serrata, Colebrooke, Asiat. Research. Olibanum.*

For. Names.—*Fr.* Oliban.—*Ital.* Olibano.—*Span.* Incienso fino.—*Ger.* Weihrauch.—*Swed.* Wirach; Virak.—*Russ.* Ladon.—*Arab.* Looban.—*Tam.* Paringhi sambrani.—*Hind.* Koondir zuchir.

Boswellia serrata figured in Nees von E. 355.—Hayne, x. 46.—St. and Ch. iii. 147.

Mr. Colebrooke was the first to prove, that the *Boswellia serrata* yields the modern gum-resin called Olibanum, sometimes imported under the name of Frankincense from the East; and that this was the frankincense of the ancients, and Λιβανος of Dioscorides.

The plant is a fine forest-tree, a native of the Coromandel coast and other parts of India. It belongs to the Linnæan class and order *Decandria Monogynia*, and is one of the *Terebinthaceæ* in Decandolle's Natural arrangement, or the *Burseraceæ* in that of Lindley. It is the *Boswellia thurifera* of some botanists, the *B. serrata* of Colebrooke. Olibanum is a gummy-resinous exudation from the trunk or branches. It consists of brittle pale-yellowish tears, roundish or oblong, powdery on the outside, translucent within, of a resinous balsamic odour, and of an acrid bitterish taste. These are composed of 56 per cent. of resin,

Fig. 149.

B. serrata.
1. Single expanded flower.