

two parts. Digest with frequent agitation until the gum be dissolved; then strain through linen.

MUCILAGO ACACIÆ. Mucilage of Gum Arabic. Lond.

Take of Gum Arabic in powder, four ounces; Boiling Water, half a pint. Rub the gum with the water, gradually added until it form a mucilage.

MUCILAGO GUMMI ARABICI. Mucilage of Gum Arabic. Dub.

Take of Gum Arabic in coarse powder, four ounces; Boiling Water, eight ounces. Digest them, agitating frequently, so as to dissolve the gum; then strain through linen.

Mucilage of gum Arabic is sometimes employed as the basis of the common demulcent mixtures used in catarrh. It is more generally used as an agent in Pharmacy, to suspend in water substances insoluble in that liquid, to diffuse oils in water, and for similar purposes.

CHAP. IX.

OF DECOCTIONS.

THE power of water as a solvent, is, like that of all other chemical agents, increased by heat. Hence, in general, the active matter of vegetable substances is more completely extracted by boiling them with water, than by mere infusion, either cold or warm, the residuum in the one case being found more inert than in the other.

It is not to be concluded, however, from this fact, that the decoction is proportionally more powerful in medicinal operation. On the contrary, though the active matter of

the substance is more completely extracted, it is often much injured in the operation: in few cases is the decoction equal in power to the quantity of the substance from which it is prepared; in many it is much impaired; and in some it is totally lost, the decoction itself and the residual matter being both nearly inert.

This change is often owing to the dissipation of the volatile principles of the substance operated on. All the essential oils are volatilized at the temperature of boiling water. It is evident, therefore, that substances, whose virtues depend wholly or in part on their essential oil, must be injured by this operation: for this reason, aromatics are always useless additions to decoctions; and the aromatic flavour of many active substances is also lost in this form of preparation.

But there are many cases in which the virtues of medicines are injured by decoction, in which we cannot ascribe the injury to the mere dissipation of their active principles. The powers of opium, cinchona, and ipecacuan, for example, are much weakened by boiling in water; yet, when the operation is conducted in close vessels, so as to collect the water that is evaporated, that water is not found to be strongly impregnated with the active matter of the substance operated on. The distilled water of opium has been given to the extent of six ounces, without exerting any great narcotic effect; and the distilled water of ipecacuan, though it proves emetic, is much less so than the simple infusion. Since, then, the active matter is neither to be found in the fluid which is evaporated, nor in that which remains, it is evident that it must have been destroyed in the operation, by decomposition of the principles on which it depends. It is accordingly found that some such change is induced. When a decoction is strained, so as to be ob-

tained transparent, and is subjected anew to boiling, it acquires a deeper colour, becomes turbid, an insipid substance being gradually formed, which is deposited. This change may be owing, either to the re-action of the elements of the vegetable matter being favoured by the humidity, and the high temperature, so that they enter into new combinations, or to the action of the air upon it imparting oxygen. There have been experiments brought in proof of this last circumstance taking place in some cases, especially in the decoction of Peruvian bark, oxygen being absorbed, combining with the extracto-resinous matter, and forming an insipid substance. This in particular is affirmed by Fourcroy. And it is farther rendered probable by the experiments of the younger Saussure, who found that extractive matter, in a humid or dissolved state, exposed to the air, was precipitated after a few days in an insoluble state; oxygen was absorbed; carbonic acid was also formed; and he concluded from the results he obtained, that, while part of the carbon of the vegetable matter is abstracted by the action of the oxygen of the air, part also of its oxygen and hydrogen combine and form water, so that the residual matter has an increased proportion of carbon, and its composition is thus totally changed. These changes will be favoured by a high temperature: they are those, therefore, probably that take place in decoction, and impair or destroy the powers of the vegetable substance; though it is also possible, that chemical changes may arise from the re-action of the elements of the vegetable matter itself, independent of any action of the air.

From these observations, it is evident, that decoction can seldom be a proper form for the administration of medicines. The pungency and aromatic flavour, on which

part of their virtues depend, and which render them at least more grateful, must always be impaired or lost, and their more important virtues must often be equally injured. It is accordingly a form which is not now often applied to active remedies.

Decoctions, like infusions, are extemporaneous prescriptions. They cannot be kept ready prepared, as in a few days they become turbid, and run into the acetous fermentation. They can be prepared, however, much sooner than infusions; the boiling not requiring to be continued in general for more than ten or fifteen minutes. While the boiling continues the air ought to be excluded by covering the vessel; and in general it ought not to be continued long. The liquor ought to be strained while hot, as, on cooling, a portion of the dissolved matter is frequently deposited, which is as active as that which remains dissolved, and this precipitate ought to be mingled with the liquid by agitation, when the dose is to be taken.

DECOCTUM ALTHÆÆ OFFICINALIS. Decoction of Althæa. Ed.

Take of Dried Althæa Root bruised, four ounces; Raisins freed from their seeds, two ounces; Water, seven pounds. Boil to five pounds; put aside the strained liquor until the impurities have subsided, and pour off the clear liquor.

The gummy part of vegetables is less injured by decoction than any other. In this decoction, therefore, all the powers of the althæa root are obtained, and it is under this form that it is used. The decoction is taken as a demulcent, to the extent of two or three pounds in the day, in nephritic complaints, in ardor urinæ, and sometimes in catarrh.

DECOCTUM ANTHEMIDIS NOBILIS, *vulgo Decoctum Chamæmeli sive Commune.* Decoction of Chamomile, or Common Decoction. Ed.

Take of the Dried Flowers of Chamomile, one ounce; Caraway Seeds bruised, half an ounce; Water, five pounds. Boil for a quarter of an hour, and strain.

DECOCTUM CHAMÆMELI COMPOSITUM. Compound Decoction of Chamomile. Dub.

Take of Chamomile Flowers dried, half an ounce; Sweet Fennel Seeds, two drachms; Water, one pint. Boil a little and strain.

These decoctions are used only as an enema, and as a fomentation. When applied to the former purpose, the effect is to be ascribed principally to the water; in the second, the vegetables are not more useful, except as retaining longer the heat and moisture when applied to a part. The decoction of the Dublin Pharmacopœia is rendered more active as an enema, by dissolving in ten ounces of it an ounce of manna, and half an ounce of sulphate of magnesia, adding an ounce of olive oil. It then forms what is named ENEMA CATHARTICUM. When to this are added two drachms of tincture of assafoetida, it forms the preparation of the same Pharmacopœia named ENEMA FOETIDUM.

DECOCTUM CINCHONÆ OFFICINALIS, *vulgo Decoctum Corticis Peruviani.* Decoction of Peruvian Bark. Ed.

Take of Peruvian Bark in powder, one ounce; Water, one pound and a half. Boil for ten minutes in a covered vessel, and strain the liquor while hot.

DECOCTUM CINCHONÆ. Decoction of Peruvian Bark. Lond.

Take of Peruvian Bark bruised, an ounce; Water, a pint. Boil for ten minutes in a vessel lightly closed, and strain the liquor while warm.

DECOCTUM CORTICIS CINCHONÆ. Decoction of Peruvian Bark. Dub.

Take of Peruvian Bark in coarse powder, an ounce; Water, a pint. Boil for ten minutes in a vessel nearly close, and strain the liquor while warm through linen.

The resino-extractive matter of Peruvian bark appears to be decomposed by decoction; hence the reason of the directions given in the Pharmacopœia under this preparation,—the boiling not being continued longer than ten minutes, as in this time the active matter, it is supposed, will be as fully extracted as it would be by longer boiling, and the decoction being performed in a covered vessel to exclude as much as possible the access of the air, to the chemical agency of which the change in the extractive matter has been supposed owing. The liquor is ordered to be strained while hot, as it holds dissolved a larger portion of the resinous matter than it can retain in solution when cold. Hence, after having been strained, it becomes turbid as it cools, depositing a reddish precipitate. This ought to be mixed with it by agitation when the dose is to be taken. The addition of a little acid causes it to remain dissolved, and where this can be prescribed with propriety it may be employed.

Decoction of bark is used in those cases which require the free administration of the remedy, but in which in substance it sits uneasy on the stomach. The dose is two or three ounces, taken as often as the stomach will receive it.

DECOCTUM DAPHNES MEZEREL. Decoction of Mezereon. Ed.

Take of the Bark of the Root of Mezereon, two drachms; of Liquorice Root bruised, half an ounce; Water, three pounds. Boil with a gentle heat to two pounds, and strain.

A compound decoction, prepared from guaiac wood, sarsaparilla, sassafras, mezereon and liquorice, had been highly celebrated, under the name of Lisbon Diet Drink, for its efficacy in the treatment of symptoms connected with syphilis, particularly thickening of the ligaments, affections of the bones and periosteum, and obstinate ulceration. Dr Russel, from a series of experiments, concluded, that the mezereon is the ingredient on which its activity depends; and this decoction, in which the liquorice serves to cover the pungency of the mezereon, has been substituted for the more complicated composition. It is used in the same cases; sometimes also in cutaneous affections, particularly lepra, and in chronic rheumatism. According to Mr Pearson's experience of it, it has little efficacy in removing the syphilitic symptoms for which it is usually prescribed. Its dose is from four to six ounces twice or thrice a-day. In a large dose, it is liable to excite nausea.

DECOCTUM GEOFFRÆÆ INERMIS. Decoction of Cabbage-Tree Bark. Ed.

Take of Cabbage-Tree Bark in powder, one ounce; Water, two pounds. Boil with a gentle heat to one pound, and strain.

This decoction is the form under which this medicine has been usually administered, the bark in substance being too violent in its operation. In the West India Islands, the decoction has been used as a very effectual remedy in worms, especially the lumbrici. The dose given is two ounces to an adult; if this occasion nausea, griping, or tenesmus, which it sometimes does, especially it is affirmed if cold water is drunk freely during its operation, these symptoms are relieved by a dose of castor oil. In this country it has not been much employed.

DECOCTUM GUAJACI OFFICINALIS COMPOSITUM, *vulgo Decoctum Lignorum*. Compound Decoction of Guaiac. Ed.

Take of Guaiac Wood Shavings, three ounces; Raisins, two ounces; Sassafras Root cut, Liquorice Root bruised, of each one ounce; Water, ten pounds. Boil the water with the guaiac wood and raisins, on a gentle fire, to five pounds, adding the roots towards the end of the boiling; then strain without expression.

This decoction derives its virtues principally from the guaiac. It acts as a diaphoretic, and has been used in cutaneous diseases, and in chronic rheumatism, taken in the quantity of a pound twice or thrice a-day. It has also been employed in the treatment of obstinate venereal symptoms, especially as an auxiliary to mercury.

DECOCTUM HORDEI DISTICHI. Decoction of Barley. Ed.

Take of Pearl Barley, two ounces; Water, five pounds. First wash off with cold water the flour adhering to the barley; then boil the barley for a short time with about half a pound of water, to extract the colouring matter. This being rejected, put the barley thus purified into five pounds of boiling water. Boil this to one half, and strain.

DECOCTUM HORDEI. Decoction of Barley. Lond.

Take of the Seeds of Barley, two ounces; Water, four pints and a half. First wash off the impurities adhering to the barley with cold water, then pouring on half a pint of water, boil the seeds a little; this water being rejected, pour on the remaining water previously heated; then boil to two pints, and strain.

DECOCTUM HORDEI. Decoction of Barley. Dub.

Take of Pearl Barley, two ounces. Having first cleansed the barley with cold water, boil it in about half a pint of water for a little. The liquor being rejected, put the barley into five pints of boiling water; then boil until the half of the water has been evaporated, and strain.

This decoction is never prepared in the shops. It is, however, very extensively used as a diluent in febrile diseases; and as it is of some importance that it should be grateful, it has been judged proper to give directions how it may be best prepared.

DECOCTUM HORDEI COMPOSITUM. Compound Decoction of Barley. Lond.

Take of Decoction of Barley, two pints; Figs cut, two ounces; Liquorice Root cut and bruised, half an ounce; Raisins freed from the seeds, two ounces; Water, a pint. Boil to two pints, and strain.

DECOCTUM HORDEI COMPOSITUM. Compound Decoction of Barley. Dub.

Take of Decoction of Barley, four pints; Raisins freed from the seeds, Figs cut, of each two ounces; Liquorice cut and bruised, half an ounce. During the boiling, add first the raisins, then the figs, and lastly the liquorice, a little before the end of the boiling, which will be complete when of the liquor about two pints remain.

The additions in these compound decoctions can communicate little efficacy, and probably render the liquor rather cloying to the taste and stomach.

DECOCTUM POLYGALÆ SENEGÆ. Decoction of Seneka. Ed.

Take of Seneka Root, one ounce; Water, two pounds. Boil to sixteen ounces, and strain.

DECOCTUM SENEGÆ. Decoction of Seneka. Lond.

Take of Seneka Root, an ounce; Water, two pints. Boil to a pint and strain.

Under the form of decoction, senega has been employed as an expectorant in pneumonic affections, attended with accumulation of mucus in the bronchiæ, and as a dia-

phoretic in chronic rheumatism. The dose is two or three ounces three or four times a-day.

DECOCTUM SMILACIS SARSAPARILLÆ. Decoction of Sarsaparilla. Ed.

Take of Sarsaparilla Root cut, six ounces; Water, eight pounds. Digest for two hours, in a temperature of about 195° , then take out the root and bruise it; put it again into the liquor, and boil it with a gentle fire to two pounds; then express it, and strain.

DECOCTUM SARSAPARILLÆ. Decoction of Sarsaparilla. Lond.

Take of Sarsaparilla Root cut, four ounces; Boiling Water, four pints. Macerate for four hours in a vessel lightly closed, nigh the fire, then cut and bruise the sarsaparilla; return it bruised into the liquor, and again macerate in a similar manner for two hours; lastly, boil to two pints, and strain.

DECOCTUM SARSAPARILLÆ. Decoction of Sarsaparilla. Dub.

Take of Sarsaparilla Root cut, an ounce and a half; Boiling Water, two pints. Digest for two hours in a medium heat, (between 100 and 200°), then take out the sarsaparilla and bruise it; return it bruised into the liquor, and again digest for two hours; lastly, let the liquor, after the half of it has been consumed by boiling, be expressed, and strained through linen.

The fecula, which is the principle in which the power of sarsaparilla resides, is not easily extracted merely by boiling the root. This is the reason of the particular directions to digest the root first, and then bruise it; it is thus softened, and yields its soluble matter more readily in the subsequent boiling. This decoction is the form under which sarsaparilla is always given, its dose being from a pint to a quart in the course of the day. It has been used in venereal cases, either to promote the action of mercury, or to remove symptoms which have remained after a long continued mercurial course. Dr Fordyce celebrated its

efficacy in very high terms, in giving relief in nocturnal pains, removing eruptions, and as being the best restorative in the emaciation and debility remaining after the long continued use of mercury. Its efficacy has however probably been overrated, and the opinion is perhaps more just which regards it only as belonging to the nutrientia, or as a demulcent. The benefit sometimes derived during its use has as frequently arisen from the exhibition of mercury too long continued having been suspended, as from any action of the sarsaparilla itself. The decoction has been used with considerable advantage as a demulcent in dysuria and morbid irritability of the bladder, occasioning incontinence of urine.

A FEW Decoctions, peculiar to the London and Dublin Pharmacopœias, remain to be noticed.

DECOCTUM ALOES COMPOSITUM. Compound Decoction of Aloes. Lond.

Take of Extract of Liquorice, half an ounce; Sub-carbonate of Potash, two scruples; Extract of Aloes, Myrrh in powder, Saffron, of each one drachm; Water, a pint. Boil down to twelve fluidounces, and strain; then add of Compound Tincture of Cardamoms, four fluidounces.

The gum-resinous substances in this decoction are retained in solution, partly by the solvent power of the water, and partly by the action of the alkali; and by the addition of the spiritous tincture, any spontaneous decomposition will be more effectually prevented. The composition is newly introduced into the Pharmacopœia, and is said to be analogous to one formerly in use, under the name of Baume de Vie. It is one which must be very nauseous, and it is

not obvious what peculiar advantage can belong to it. As a stimulating aperient, it may be given in the dose of two ounces.

DECOCTUM CYDONIÆ. Decoction of Quince Seeds. Lond.

Take of Quince Seeds, two drachms; Water, a pint. Boil with a gentle heat for ten minutes, then strain.

Quince seeds abound with mucilage, which is extracted easily by boiling in water. It is liable to spontaneous decomposition, and having no peculiar advantage, is little employed.

DECOCTUM DULCAMARÆ. Decoction of Woody Nightshade. Lond.

Take of the Stalks of Woody Nightshade cut, one ounce; Water, a pint and a half. Boil to a pint, and strain.

Under this form the woody nightshade may be employed; but there seems no propriety in giving a formula for its preparation, more than any other vegetable substance, which may be given under the same or any similar form.

DECOCTUM LICHENIS. Decoction of Iceland Liverwort. Lond.

Take of Liverwort, one ounce; Water, a pint and a half. Boil down to one pint, and strain.

DECOCTUM LICHENIS ISLANDICI. Decoction of Iceland Liverwort. Dub.

Take of Iceland Liverwort, half an ounce; Boiling Water, a pint. Digest for two hours in a close vessel, then boil for a quarter of an hour, and strain the liquor while warm.

The fecula or mucilage of the lichen is extracted by water by boiling, and it is under this form of decoction that it

has been employed as a demulcent, and a mild nutritious substance easy of digestion. It may be rendered more grateful by removing the bitter matter of the lichen, by previous maceration.

DECOCTUM MALVÆ COMPOSITUM. Compound Decoction of Mallow. Lond.

Take of Mallow dried, an ounce; Chamomile Flowers, dried, half an ounce; Water, a pint. Boil them for a quarter of an hour, and strain.

This decoction is designed for the same purpose as the decoction of chamomile, that of serving as a vehicle for fomentations and enemas; and the same observation applies to it.

DECOCTUM PAPAVERIS. Decoction of Poppy. Lond.

Take of the Capsules of the White Poppy cut, four ounces; Water, four pints. Boil for a quarter of an hour, and strain.

The decoction of the capsules of the poppy has been frequently used as an anodyne fomentation, and is now, with propriety, introduced as an officinal preparation.

DECOCTUM QUERCUS. Decoction of Oak Bark. Lond.

Take of Oak Bark, an ounce; Water, two pints. Boil down to a pint, and strain.

The astringency of the oak bark is extracted by boiling in water; and the decoction is the form under which it is used, externally as a styptic in hæmorrhoids, prolapsus ani, leucorrhœa, and profuse menorrhagia.

DECOCTUM SARSAPARILLÆ COMPOSITUM. Compound Decoction of Sarsaparilla. Lond.

Take of the Simple Decoction of Sarsaparilla boiling, four pints; Sassafras Wood cut, Raspings of Guaiac Wood, Liquorice Root bruised, of each one ounce; Mezereon, three drachms. Boil for a quarter of an hour.

DECOCTUM SARSAPARILLÆ COMPOSITUM. Compound Decoction of Sarsaparilla Dub.

Take of Sarsaparilla Root cut and bruised, an ounce and a half; Shavings of Guaiac Wood, Bark of Sassafras Root, Liquorice bruised, of each two drachms; Bark of Mezereon Root, a drachm; Boiling Water, three pints. Digest the sarsaparilla, guaiac and sassafras in water at a heat between 100° and 200° for six hours; then boil until the half of the water is evaporated, adding towards the end of the boiling the liquorice with the mezereon; lastly, strain.

This is nearly the same composition as the Lisbon Diet Drink, celebrated, as has been already remarked, in the treatment of secondary venereal affections, or symptoms appearing during a protracted mercurial course. The efficacy of the preparation has been supposed to depend principally on the mezereon; the other substances may, however, add something to its power, and it is perhaps preferable to adhere to the original composition of remedies of this kind, so far as this is unexceptionable. Its dose is four or six ounces, three or four times a-day.

DECOCTUM ULMI. Decoction of Elm. Lond.

Take of the Fresh Bark of the Elm bruised, four ounces; Water, four pints. Boil down to two pints, and strain.

DECOCTUM ULMI. Decoction of Elm. Dub.

Take of the interior Fresh Bark of the Elm bruised, two ounces; Water, two pints. Boil to a pint, and strain.

This decoction has been recommended in cutaneous eruptions, but is little used. Its dose is four ounces.

DECOCTUM VERATRI. Decoction of White Hellebore. Lond.

Take of White Hellebore Root beat, an ounce; Water, two pints. Rectified Spirit, two fluidounces. Boil the white hellebore root with the water down to a pint, and strain; when cold, add the spirit.

This decoction is employed as an external application in some cutaneous diseases, principally in psora. It is a much less unpleasant application than the sulphur ointment, and is occasionally successful.

DECOCTUM DIGITALIS. Decoction of Foxglove. Dub.

Take of the Leaves of Foxglove dried, one drachm; Water, as much as may be sufficient to afford eight ounces of strained liquor. Place the vessel on a gentle fire, and remove it when the liquor begins to boil; then digest for a quarter of an hour, and strain.

Water extracts sufficiently the active matter of the leaves of foxglove by infusion, and there is therefore no necessity for boiling it upon them. The decoction in this preparation is, however, so slight, that it cannot alter the powers of the medicine, and it may be regarded as analogous to the infusion of the other Pharmacopœias. The proportions too are the same, and it may therefore be given in the same dose.