

**Saccharin : the place of saccharin in pharmacy, with formulae / by
Professor Attfield.**

Contributors

Attfield, John, 1835-1911.
Royal College of Surgeons of England

Publication/Creation

London : Wilson, Salamon, 1889.

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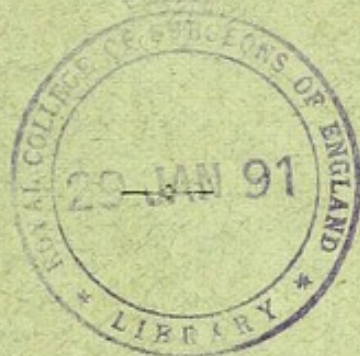
SACCHARIN.

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THE
PLACE OF SACCHARIN IN PHARMACY:
WITH FORMULÆ.

BY
PROFESSOR ATTFIELD, F.R.S., ETC.,

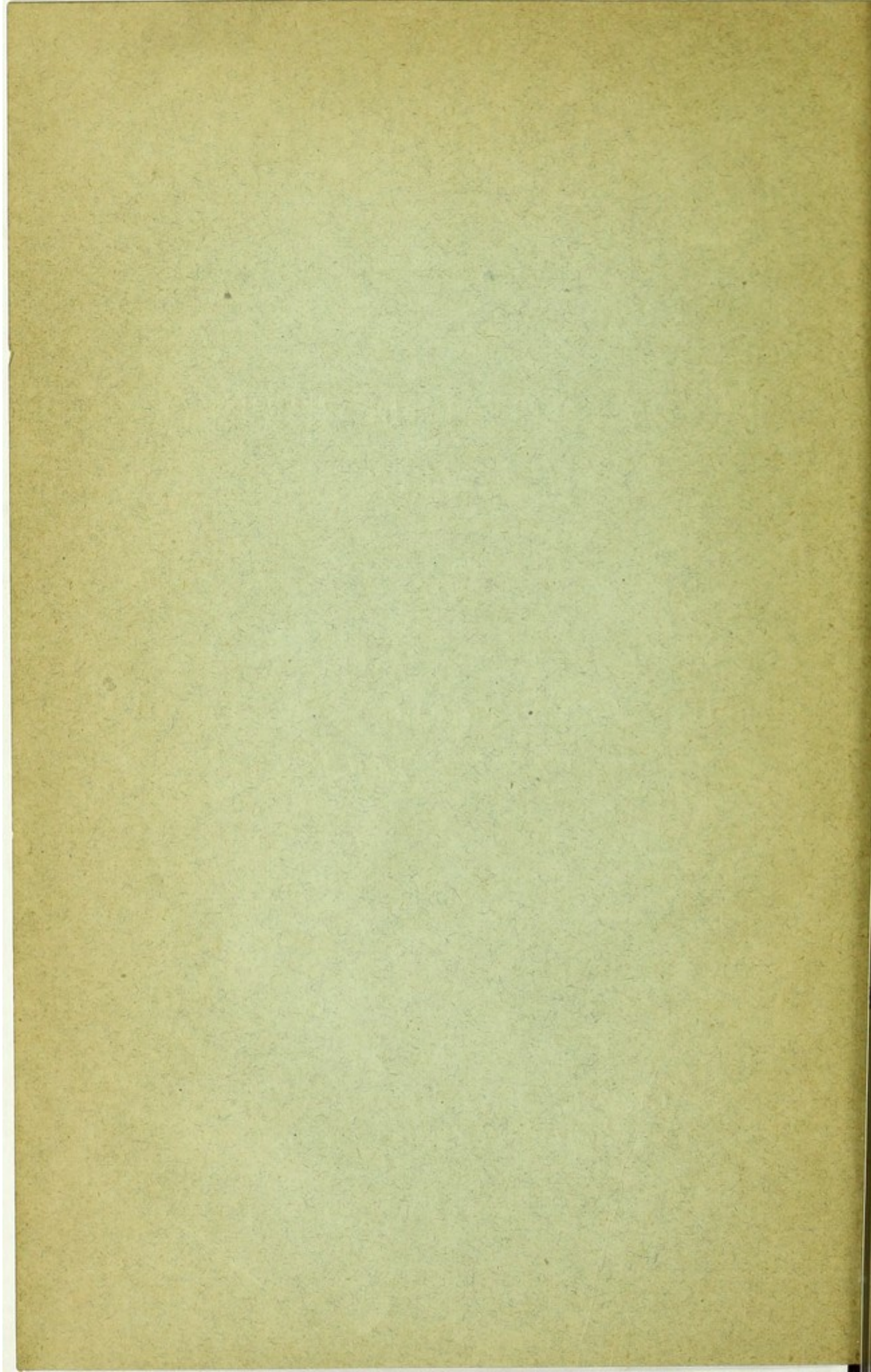
*One of the Editors of the British Pharmacopæia; Author of a Manual
of Chemistry, and a Hand-book on Water Supplies; etc.*



London:

WILSON, SALAMON & Co.,
18, BILLITER STREET.

1889.



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BY PROFESSOR ATTFIELD, F.R.S., ETC.

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Manual of Chemistry, and a Hand-book on Water Supplies; Etc.*

SACCHARIN will be of good service in pharmacy in four ways. Firstly, it will give patients an opportunity of taking certain medicines in comparatively small bulk. Many medicinal confections, powders, and lozenges, have hitherto necessarily contained large proportions of sugar. A mere trace of saccharin put in place of the sugar, while rendering the medicaments as sweet as before, will give such a reduction in bulk that, for example, a bismuth lozenge will become a mere pellet, and compound liquorice powder, or confection of senna, be reduced to half their old volume. Secondly, the intensity of the sweetness of saccharin will enable it to mask the nauseous taste of certain medicines, the flavour of cod liver oil, for example, being well disguised. Thirdly, patients who are obliged to avoid sugar will no longer be deprived of its property of sweetness, for not only tea, coffee, cocoa, etc., but many medicines also, containing saccharin in place of sugar, will once more become palatable—sweet, but not harmfully sweet. Fourthly, saccharin not being liable to ferment, while sugar is specially prone to ferment, its use will afford permanent preparations where those made with sugar would frequently spoil.

The exhibition of saccharin will present no difficulties. In prescriptions for fluids, such as gargles, mixtures, and emulsions, where physicians would have ordered a given quantity of solution of sugar (syrupus) they will prescribe an equal volume of simple solution of saccharin (sol. sacc. simp.). In prescriptions for a powder, or a confection-like mass, saccharin itself might be prescribed (see appended examples). And most of the large

number of galenical preparations, as commonly ordered by physicians, and now made with sugar, would be prepared with saccharin (see appended formulæ), and would be set forth in prescriptions under distinctive names—mist. cretæ *sacc.*; pulv. glycyrr. co. *sacc.* concent.; conf. sennæ *sacc.* concent.; etc.

Concerning incompatibles. Saccharin is a tolerably indifferent substance. It is unaffected by the fluids of the body, acid or otherwise, for it has been proved to pass through the system unchanged. Fusion with caustic alkali gives a salicylate, hence prolonged contact with strong alkalies is probably undesirable; and, obviously, acids would precipitate saccharin itself from a strong, though not from a weak, solution of a soluble saccharinate, that is, "soluble saccharin"; but saccharin is quite unaffected by the ordinary materials used in medicine.

Respecting nomenclature. It is greatly to be regretted that the name *saccharine* or *saccharin*, was given to the substance under consideration. *Saccharine* is a name already commonly used in trade for various forms of sugar, and, except that it is sweet, saccharin is not in any sense a sugar, nor is it sugar-like. *Saccharin* is a name already used in scientific chemistry for a product of the action of alkali on sugar. In pharmacy, and in medical practice, the very similar word *saccharum* is the name for sugar itself—Latin being the one language used in those callings, instead of the various languages of the respective countries. Confusion results to all parties when a new substance is christened by a name already used and recognized for quite a different substance, and, in the present instance, a name which in its medical form, either in full or contracted, *saccharinum* or *sacc.*, is so liable to be mistaken for that of the very body it is intended to supplant, *saccharum* or *sacc.* An entirely new name should have been given to this new sweetening material, or, if its name demanded a record of its sweetness, it might have been usefully, if not elegantly, termed *glukusin* (γλυκὺς, *sweet*), not glucosin nor glucosine. At least, it might have been called *neosaccharin* (new saccharin), which would have prevented the contraction in prescriptions being identical with that for sugar; instead of having *sacc.*, as the contraction for both names, we should then have had, as hitherto,

sacc., for sugar, and *neosacc.*, for the new substance. The name cannot, perhaps, now be altered, either by maker, vendor, prescriber, or any private person, but should the article eventually be considered worthy of inclusion in any national pharmacopœia, the compilers might well give it a new leading name, with *saccharin* as a synonym. Meanwhile, the names given in the following formulæ will, perhaps, prevent saccharinated compounds being mistaken for the corresponding official compounds, and, generally, it is hoped, will be found to be such as will be least likely to lead to confusion.

Respecting the appended galenical formulæ, a few have already been published, and, in some cases, represent the combined experience of several pharmacists. The others have been devised for present purposes, and have only been tried once or twice. So far, the preparations seem satisfactory, but in some cases, modifications may suggest themselves after experience has been gained respecting the permanence, or other property of the respective compounds. The general principles followed in compiling the formulæ of the various saccharinated preparations have been the replacing of the sweetness of sugar by the sweetness of saccharin, without altering the strength of the preparation at all, or, on the other hand, of so materially altering the strength as to warrant the introduction of the word "concentrated" into the name of the saccharinated compound. This treatment seemed to be that which would involve the minimum of trouble to all interested in the employment of saccharin in pharmacy. Where strength has not been materially altered, a thickening material, in place of an equal volume of syrup, has been employed; a very small quantity of powdered tragacanth has taken the place of a large quantity of sugar or other objectionable carbohydrate. In special cases, gluten might be used instead of a carbohydrate. But the amount of tragacanth in a dose of any saccharinated preparation containing it, is so minute as to be scarcely worthy of medical consideration.

SOLUTIO SACCHARINI SIMPLEX.

Simple Solution of Saccharin.

(It has the same degree of sweetness as the *Syrupus* of the British Pharmacopœia—B.P.—and therefore would be prescribed in exactly similar quantities).

Take of

Soluble Saccharin	...	...	...	...	...	...	30 grains
Distilled Water	...	...	...	...	...	...	1 pint.

Dissolve. Each fluid ounce contains a grain and a half of soluble saccharin.
Each fluid drachm represents one-sixth of a grain of ordinary saccharin.

LIQUOR SACCHARINI, A.P.A.

Solution of Saccharin.

(From the National Formulary of the American Pharmaceutical Association.)

Take of

Saccharin	...	...	...	...	...	...	512 grains.
Bicarbonate of Sodium	...	...	...	...	...	...	240 grains.
Alcohol	...	...	...	...	...	...	4 fluid ounces.
Water, sufficient to produce	...	...	...	...	...	...	16 fluid ounces.

Dissolve. Each fluid drachm represents four grains of saccharin.

ELIXIR SACCHARINI, B.P.C.*

Elixir of Saccharin.

Take of

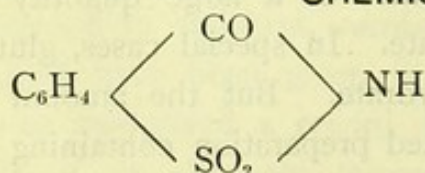
Saccharin	...	...	...	...	...	...	480 grains.
Bicarbonate of Sodium	...	...	...	...	...	...	240 grains.
Rectified Spirit	...	...	...	...	...	...	2½ fluid ounces.
Distilled Water	...	...	...	...	...	...	a sufficiency.

Rub the saccharin and bicarbonate of sodium in a mortar, with half a pint of distilled water gradually added. When dissolved, add the spirit, filter, and wash the filter with sufficient distilled water to produce one pint of elixir. Each fluid drachm represents three grains of saccharin.

Dose.—5 to 20 minims.

Note.—Saccharin itself is but slightly soluble in water (0.46 per cent.), but is readily dissolved if previously mixed with at least half its weight of bicarbonate of sodium, with the sodium of which it forms a soluble saccharinate, containing the equivalent of practically ninety per cent. of saccharin. This is "Soluble Saccharin." It is soluble in twice its weight of water.

CHEMICAL FORMULÆ.

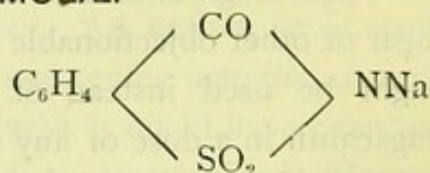


Saccharin.

Expressed in weight, 183.

Or, 100 of saccharin = 112 of soluble saccharin.

Or, 100 of soluble saccharin = 89¼ of saccharin.



Soluble saccharin.

Expressed in weight (183—1 + 23) 205.

* The Unofficial Formulary of the British Pharmaceutical Conference.

GALENICAL FORMULÆ, ETC.

CONFECTIO OPII SACCHARINATA.

Saccharinated Confection of Opium.

If a saccharinated confection of opium of the *same strength* as that of the official confection (1 in 40) were desired, some such stiffening agent as gluten in place of the sugar might be employed. But the following *concentrated* preparation will probably best answer all requirements.

CONFECTIO OPII SACC. CONCENT.

Concentrated Saccharinated Confection of Opium.

(1 part of opium in 20 parts.)

Take of

Compound Powder of Opium...	...	...	...	...	1 ounce.
Distilled Water...	...	...	...	...	1 ounce.
Saccharin	...	...	...	...	4 grains.

Mix. Dose.— $2\frac{1}{2}$ to 10 grains.

This confection is half the bulk, but twice the strength of the official confection. The dose is, consequently, half that of the official confection.

CONFECTIO PIPERIS (B.P.) SACCHARINATA.

(1 part of pepper in 10 parts.)

The remarks made under the previous confection apply in this case; therefore the formula for the concentrated (double strength) preparation is given. But a formula for the popular confection of the London Pharmacopœia, or "Ward's Paste," of ordinary strength is also included.

CONFECTIO PIPERIS SACC. CONCENT.

Concentrated Saccharinated Confection of Pepper.

(1 part of pepper in 5 parts.)

Take of

Black Pepper, in fine powder...	...	...	...	...	2 ounces.
Caraway Fruit, in fine powder	...	...	...	...	3 ounces.
Tragacanth, in fine powder	...	...	...	...	$\frac{1}{4}$ ounce.
Saccharin	...	...	...	...	22 grains.
Distilled Water...	...	...	...	...	$4\frac{3}{4}$ fluid ounces.

Rub them well together in a mortar.

Dose.—30 to 60 grains.

Absence of sugar (honey) renders the above useful when sugar is contra-indicated. It is only half as bulky as the official (B.P.) confection, but is of double the strength; hence the dose is half that of the official preparation.

CONFECTIO PIPERIS (P.L.) SACCHARINATA.
 Saccharinated "Ward's Paste."

Take of

Black Pepper, in fine powder	...	...	...	...	1 pound.
Elecampane Root, in fine powder	...	...	...	...	1 pound.
Fennel Fruit, in fine powder	...	...	...	...	3 pounds.
Saccharin	...	...	...	...	93 grains.
Tragacanth, in fine powder	...	...	...	...	1 $\frac{1}{4}$ ounce.
Distilled Water	...	...	...	...	a sufficiency.

Rub the dry ingredients together, and keep the product in a covered vessel. When the confection is to be used, rub 5 parts by weight of the powder with 4 similar parts by weight of the water, in a mortar, until incorporated. The strength, and therefore the dose, are similar to those of the old confection of the London Pharmacopœia.

Dose.—60 to 120 grains. It contains 1 part of pepper in 9 parts.

CONFECTIO SCAMMONII SACCHARINATA.

(1 part of scammony resin in about 3 parts.)

Take of

Resin of Scammony, in powder	...	...	...	...	6 ounces.
Ginger, in fine powder	...	...	...	...	3 ounces.
Oil of Caraway	...	...	...	...	$\frac{1}{4}$ fluid ounce.
Oil of Cloves	...	...	...	...	$\frac{1}{8}$ fluid ounce.
Saccharin	...	...	...	...	8 grains.
Tragacanth, in powder	...	...	...	...	$\frac{3}{4}$ ounce.
Distilled Water	...	...	...	...	10 $\frac{1}{4}$ fluid ounces.

Mix. This confection is of the same strength as that of the Confection of Scammony of the British Pharmacopœia, hence the dose is the same. It should be recently prepared.

Dose.—10 to 30 grains.

CONFECTIO SENNÆ SACCO. CONCENT.

Concentrated Saccharinated Confection of Senna.

Take of

Senna, in fine powder	...	...	...	...	7 ounces.
Coriander Fruit, in fine powder	...	...	...	...	3 ounces.
Figs	...	...	...	...	12 ounces.
Tamarind	...	...	...	...	9 ounces.
Cassia Pulp	...	...	...	...	9 ounces.
Prunes	...	...	...	...	6 ounces.
Extract of Liquorice	...	...	...	...	1 ounce.
Saccharin	...	...	...	...	44 grains.
Distilled Water	...	...	...	a sufficiency to make	37 $\frac{1}{2}$ ounces.

Boil the figs and prunes gently with some distilled water in a covered vessel for four hours, then mix the tamarind and cassia pulp, digest for two hours, and

rub the softened pulp of the fruits through a hair sieve, rejecting the seeds and other hard parts. To the pulped product add the extract of liquorice, and dissolve with the aid of heat; while the mixture is still warm, add to it gradually the already mixed senna and coriander powders and saccharin, and mix the whole thoroughly, making the weight of the resulting confection thirty-seven and a half ounces, either by evaporation or by the addition of more distilled water.

Absence of the large proportion of added sugar, characteristic of the official (B.P.) preparation, renders this confection more suitable for patients who must take as little carbohydrates as possible. But probably all persons who take confection of senna will welcome this saccharinated modification, because, it being twice as strong as the old confection, only half the old dose need be swallowed.

Dose.—30 to 60 grains.

CONFECTIO SULPHURIS SACCHARINATA.

Saccharinated Confection of Sulphur.

Take of

Sublimed Sulphur	...	...	...	...	...	4 ounces.
Acid Tartrate of Potassium, in powder	...	...	...	...	...	1 ounce.
Tincture of Orange Peel	...	...	...	...	...	$\frac{1}{4}$ fluid ounce.
Saccharin	...	...	...	...	...	$3\frac{1}{2}$ grains.
Tragacanth, in powder	...	...	...	...	...	50 grains.
Distilled Water	...	...	...	...	...	$3\frac{1}{2}$ fluid ounces.

Mix. This preparation would be employed where the sugar of the official confection is contra-indicated. The strength, and therefore the dose, are similar to those of the B. P. confection.

Dose.—60 to 120 grains.

CONFECTIO TEREBINTHINÆ SACCHARINATA.

Saccharinated Confection of Turpentine.

Take of

Oil of Turpentine	...	...	...	...	...	1 fluid ounce.
Liquorice Root, in powder	...	...	...	...	...	$1\frac{1}{2}$ ounce.
Saccharin	...	...	...	...	...	3 grains.
Tragacanth, in powder	...	...	...	...	...	15 grains.

Mix. *This confection is nearly double the strength of the official confection—1 of turpentine in $2\frac{1}{2}$, as against 1 in 4. Hence the diminished dose—40 to 80 grains.*

This confection should be freshly prepared, for the turpentine is liable to evaporate.

ELIXIR CASCARÆ SAGRADÆ SACCHARINATUM.

Saccharinated Elixir of Cascara Sagrada.

Take of

Tincture of Fresh Orange Peel	...	...	...	...	2 fluid ounces.
Rectified Spirit	...	...	...	...	1 fluid ounce.
Cinnamon Water	...	...	...	...	3 fluid ounces.
Elixir of Saccharin, B.P.C.	...	...	...	...	6 fluid ounces.
Liquid Extract of Cascara Sagrada	...	...	...	...	8 fluid ounces.

Mix. *Dose.*—15 minims to two fluid drachms.

This is the B.P.C. formula with Elixir of Saccharin, B.P.C., in place of syrup. *The advantages of the preparation are the absence of sugar, and the very considerable disguise to the nauseous flavour of the cascara.*

EMULSIO OLEI MORRHUÆ SACCHARINATA, B.P.C.

Saccharinated Emulsion of Cod Liver Oil.

Take of

Cod Liver Oil	...	...	...	...	...	...	8 fluid ounces.
The Yolks of two Eggs.							
Tragacanth, in powder	...	...	...	...	...	...	16 grains.
Elixir of Saccharin	...	...	...	...	...	...	1 fluid drachm.
Simple Tincture of Benzoin	...	...	...	...	...	...	1 fluid drachm.
Spirit of Chloroform	...	...	...	...	...	...	4 fluid drachms.
Essential Oil of Bitter Almonds	...	...	...	...	...	...	8 minims.
Distilled Water, sufficient to produce	...	...	...	...	...	...	16 fluid ounces.

Measure five fluid ounces of the distilled water. Place the tragacanth in powder in a dry mortar, and triturate with a little of the cod liver oil; then add the yolks of eggs, and stir briskly, adding water as the mixture thickens. When of a suitable consistence add the remainder of the oil and water alternately, with constant stirring, avoiding frothing. Transfer to a pint bottle, add the elixir of saccharin, tincture of benzoin, spirit of chloroform, and oil of almonds, previously mixed; shake well, and add distilled water, if necessary, to make the product measure sixteen fluid ounces.

Dose.—2 to 8 fluid drachms.

EMULSIO OLEI RICINI SACCHARINATA.

Saccharinated Emulsion of Castor Oil.

Take of

Castor Oil	...	...	...	...	...	...	1 fluid ounce.
Gum Acacia, in powder	...	...	...	...	...	...	180 grains.
Essential Oil of Bitter Almonds	...	...	...	...	...	...	2 minims.
Oil of Cloves	...	...	...	...	...	...	1 minim.
Saccharin	...	...	...	...	...	...	1 grain.
Distilled Water, sufficient to make	...	...	...	...	...	...	4 fluid ounces.

Rub the saccharin with the gum and the essential oils in a mortar. Add half an ounce of the water at once. Add the castor oil by degrees, stirring, and the remainder of the water in the same manner.

Dose.— $\frac{1}{2}$ to 2 fluid ounces.

This is Gerrard's formula.

In both the above emulsions the taste of the oil is well disguised.

GARGARISMA ALUMINIS SACCHARINATUM.**Saccharinated Emulsion of Alum.**

Recipe

Aluminis	...	...	...	...	...	...	...	gr. xx.
Sol. Sacc. Simp.	...	...	...	...	...	...	...	℥iv.
Aq. Destill.	...	...	...	...	...	...	...	ad ℥ij.

M.

GARGARISMA ACIDI TANNICI SACCHARINATUM.

Recipe

Glycerini Acidi Tannici	...	...	...	...	...	...	...	℥ij.
Sol. Sacc. Simp.	...	...	...	...	...	...	...	℥i.
Aq. Destill.	...	...	...	...	...	...	...	ad ℥ij.

M.

MISTURA AMYGDALÆ SACCHARINATA.**Saccharinated Almond Mixture.**

Take of

Compound Powder of Almonds, Saccharinated	..	...	1 part.
Distilled Water	..	...	10½ fluid parts.

Rub the powder, with a little of the water, into a thin paste, then add the remainder of the water, and strain through muslin.

Dose.—1 to 2 fluid ounces.

This corresponds in strength with the *Mistura Amygdalæ*, B.P., but contains no sugar. It should not be kept more than a few days.

MISTURA CRETÆ SACCHARINATA.**Saccharinated Chalk Mixture.**

Take of

Prepared Chalk...	...	...	...	...	...	¼ ounce.
Gum Acacia, in powder	...	...	...	...	...	¼ ounce.
Simple Solution of Saccharin...	...	...	...	...	...	½ fluid ounce.
Cinnamon Water	...	...	...	...	...	7½ fluid ounces.

Triturate the chalk and gum acacia with the cinnamon water, then add the simple solution of saccharin, and mix.

Dose.—1 to 2 fluid ounces.

This corresponds in strength with the *Mistura Cretæ*, B.P., but contains no sugar.

MISTURA SPIRITUS VINI GALLICI SACCHARINATA.**Saccharinated Mixture of French Brandy.**

Take of

French Brandy	...	...	...	...	...	4 fluid ounces.
Cinnamon Water	...	...	...	...	...	4 fluid ounces.
The Yolks of Two Eggs.						
Simple Solution of Saccharin	...	...	...	...	...	½ fluid ounce.

Rub the yolks in a mortar, then add the cinnamon water, spirit, and simple solution of saccharin.

Dose.—1 to 2 fluid ounces.

This is the official (B.P.) "Mixture," with simple solution of saccharin in place of sugar.

Note.—Saccharin will not usefully take the place of sugar in *Mistura Ferri Composita*, B.P., or *Mistura Guaiaci*, B.P., for it is not to be expected that saccharin will prevent oxidation. If the sugar in these official mixtures is objectionable in certain cases, other preparations of iron or of guaiacum must be prescribed.

Note.—In the following medicines or "Mixtures," the "*Sol. Sacc. Simp.*" takes the place of a similar volume of *Syrupus*, B.P., and well disguises the objectionable taste of the respective remedies.

Recipe

Salicin	...	...	...	...	...	...	...	gr. lxxx.
Sol. Sacc. Simp.	...	...	...	...	...	...	...	℥x.
Aq. Destill.	...	...	...	...	...	...	...	ad ℥viij.

M. *Dose.*—1 fluid ounce.

Recipe

Liq. Ferri Perchlor.	...	...	...	...	...	...	...	℥ij.
Sol. Sacc. Simp.	...	...	...	...	...	...	...	℥iss.
Aq. Destill.	...	...	...	...	...	...	...	ad ℥viij.

M. *Dose.*—1 fluid ounce.

Recipe

Sodii Salicylatis	...	...	...	...	...	...	...	℥ij.
Sol. Sacc. Simp.	...	...	...	...	...	...	...	℥ij.
Aq. Destill.	...	...	...	...	...	...	...	ad ℥viij.

M. *Dose.*—1 fluid ounce.

Recipe

Potas. Iodid.	...	...	...	...	...	...	...	gr. lxxx.
Sol. Sacc. Simp.	...	...	...	...	...	...	...	℥iss.
Aq. Destill.	...	...	...	...	...	...	...	ad ℥viij.

M. *Dose.*—1 fluid ounce.

Recipe

Tinct. Nucis Vomic.	...	...	...	...	...	...	...	m. lxxx.
Sol. Sacc. Simp.	...	...	...	...	...	...	...	℥iss.
Aq. Destill.	...	...	...	...	...	...	...	ad ℥viii.

M. *Dose.*—1 fluid ounce.

PULVIS AMYGDALÆ COMPOSITUS SACCHARINATUS.**Saccharinated Compound Powder of Almonds.**

Take of

Sweet Almonds	...	...	...	...	...	...	...	8 ounces.
Gum Acacia, in powder	...	...	...	...	...	...	...	1 ounce.
Saccharin	...	...	...	...	...	...	...	6 grains.

Steep the almonds in water until their skins can easily be removed; and, when blanched, dry them thoroughly with a soft cloth, and rub them in a mortar to a smooth consistence. Mix the gum and the saccharin; and, adding them to the almond pulp gradually, rub the whole to a coarse powder. Keep it in a lightly covered jar.

This preparation is about one-third stronger than the Pulvis Amygdalæ Compositus, B.P. It is used in making Mistura Amygd. Co. Sacc.

PULVIS CRETÆ AROMAT. SACC. CONCENT.**Concentrated Saccharinated Aromatic Powder of Chalk.***Synonym.—Conf. Aromat. Sacc. Concent.*

Take of

Cinnamon Bark, in powder	...	...	...	...	...	...	...	4 ounces.
Nutmeg, in powder	...	...	...	...	...	...	...	3 ounces.
Saffron, in powder	...	...	...	...	...	...	...	3 ounces.
Cloves, in powder	...	...	...	...	...	...	...	1½ ounce.
Cardamom Seeds, in powder	...	...	...	...	...	...	...	1 ounce.
Saccharin	...	...	...	...	...	...	...	36½ grains.
Prepared Chalk	...	...	...	...	...	...	...	11 ounces.

Mix them thoroughly, pass the powder through a fine sieve, and finally rub it lightly in a mortar. Keep it in a stoppered bottle.

If a product of bright colour be desired, the saffron may previously be moistened and triturated with a little water or spirit, or the fresh and faintly damp mixture may be subjected to considerable pressure in the triturating process.

The above "pinch" of saccharin takes the place of 25 ounces of sugar. The preparation is practically double the strength of the Pulvis Cretæ Aromaticus, B.P.; the dose, consequently, is one-half.

Dose.—5 to 30 grains.

PULV. CRETÆ AROMAT. CUM OPIO SACC. CONCENT.**Concentrated Saccharinated Aromatic Powder of Chalk with Opium.***Synonym.—Conf. Aromat. c. Opio Sacc. Concent.*

Take of

Concentrated Saccharinated Aromatic Powder of Chalk	...	...	...	...	...	...	...	4¾ ounces.
Opium, in powder	...	...	...	...	...	...	...	¼ ounce.

Mix. *This preparation, through the displacement of sugar by saccharin, is double the strength of the Pulvis Cretæ Aromaticus cum Opio, B.P.; the dose consequently, is one-half.*

Dose.—5 to 20 grains.

PULVIS GLYCYRRHIZÆ COMPOSITUS SACC. CONCENT.

Concentrated Saccharinated "Liquorice Powder."

Take of

Senna, in fine powder ...	2 ounces.
Liquorice Root, in fine powder ...	2 ounces.
Fennel Fruit, in fine powder ...	1 ounce.
Sublimed Sulphur ...	1 ounce.
Saccharin ...	9 grains.

Mix them thoroughly, pass the powder through a fine sieve, and finally rub it lightly in a mortar.

Dose.—15 to 30 grains.

This preparation is double the strength of the Pulvis Glycyrrhizæ Compositus, B.P., hence the dose is one-half. The 9 grains of saccharin take the place of 6 ounces of sugar. Patients travelling will only have to carry about with them half their former stock of "Liquorice powder."

PULVIS TRAGACANTHÆ CO. SACC. CONCENT.

Saccharinated Concentrated Compound Powder of Tragacanth.

Take of

Tragacanth, in powder ...	1 ounce.
Gum Acacia, in powder ...	1 ounce.
Starch, in powder ...	1 ounce.
Saccharin ...	4 grains.

Rub them well together.

Dose.—10 to 30 grains.

To substitute the sweetness of the 3 ounces of sugar in Pulvis Tragacanthæ Compositus, B.P., by the sweetness of 4 grains of saccharin, and thus at once to reduce the bulk to one-half, and the dose to one-half, is easy, without practically reducing the demulcent or suspensory properties of a mucilage made with the powder. But where carbohydrates are altogether contra-indicated, the exhibition of either the official or the saccharinated powder would, of course, be inappropriate.

PULVERES SANTONINI.

Santonin Powders.

Synonym.—Worm Powders.

Take of

Santonin ...	240 grains.
Saccharin ...	2 grains.
Scammony, in powder ...	180 grains.
Bicarbonate of Sodium ...	60 grains.
Sugar of Milk ...	240 grains.

Rub together the santonin, saccharin, and sugar of milk, in a mortar, add the other ingredients, mix, and sift.

Dose.—None to be given to children under six months old. From 6 months to 2 years, 2 grains; from 2 to 5 years, 1 grain for each year; 5 to 8 years, 6 grains; 8 to 12 years, $7\frac{1}{2}$ grains: at bedtime. *Chemist and Druggist*, Jan. 21, 1888, p. 93.

The saccharin gives as much sweetness as an amount of ordinary sugar such as would nearly double the bulk of the above powder.

SACCHARINOLES OR SYRUP SUBSTITUTES.

SACCHARINOLEUM AURANTII.

Saccharinole of Orange.

Take of

Tincture of Orange Peel	1 fluid ounce.
Simple Solution of Saccharin	7 fluid ounces.

Mix. This preparation is equivalent in sweetness to *Syrupus Aurantii*, B.P., the sugar in the latter being displaced by saccharin.

Dose.—1 fluid drachm.

SACCHARINOLEUM CHLORAL.

Saccharinole of Chloral.

(10 grains of chloral in one fluid drachm.)

Take of

Hydrate of Chloral	80 grains.
Distilled Water	$1\frac{1}{2}$ fluid drachm.
Simple Solution of Saccharin	a sufficiency.

Dissolve the hydrate of chloral in the water, and add the simple solution of saccharin until the mixed product measures one fluid ounce.

This preparation has the same strength as *Syrupus Chloral*, B.P., and the dose is the same.

Dose.— $\frac{1}{2}$ to 2 fluid drachms.

SACCHARINOLEUM TOLUTANUM.

Saccharinole of Tolu.

(Same strength as *Syrupus Tolutanus*, B.P.)

Take of

Balsam of Tolu	$1\frac{1}{4}$ ounce.
Soluble Saccharin	52 grains.
Distilled Water	a sufficiency.

Boil the balsam in one pint of the water for half-an-hour in a lightly covered vessel, stirring occasionally. Then remove from the fire, and filter the solution when cold. Dissolve the soluble saccharin in a pint and a half of the water, and mix the two solutions. If necessary, add distilled water so that the product shall measure forty-eight fluid ounces.

Dose.—1 fluid drachm.

SACCHARINOLEUM TOLUTANUM CONCENTRATUM.

Concentrated Saccharinole of Tolu.

Take of

Balsam of Tolu	...	...	...	...	...	...	1 $\frac{1}{4}$ ounce.
Soluble Saccharin	...	...	...	...	...	...	52 grains.
Distilled Water	...	...	...	...	...	...	a sufficiency.

Boil the balsam in fourteen fluid ounces of water for half-an-hour in a lightly covered vessel, stirring occasionally. Remove from the fire, and add distilled water, if necessary, so that the liquid shall measure twelve fluid ounces. Filter the solution when cold, and dissolve the soluble saccharin in the filtered liquid.

Dose.—15 minims.

This preparation has four times the sweetness of Syrupus Tolutani, B.P., yet contains no sugar.

One fluid part of this concentrated saccharinole mixed with three fluid parts of distilled water will give a *Saccharinoleum Tolutanum*, the equivalent of *Syrupus Tolutani* in sweetness.

SACCHARINOLEUM ZINGIBERIS.

Saccharinole of Ginger.

Take of

Strong Tincture of Ginger	...	...	...	...	6 fluid drachms.
Simple Solution of Saccharin, sufficient to produce	...	...	...	...	20 fluid ounces.

Mix, with agitation.

Dose.—1 fluid drachm.

This preparation is of the same strength as *Syrupus Zingiberis*, B.P., and, without containing sugar, has similar sweetness.

EFFERVESCENT PREPARATIONS.

SODII CITRO-TARTRAS EFFERVESCENS SACC.

Saccharinated Effervescent Citro-tartrate of Sodium.

Take of

Bicarbonate of Sodium, in powder	...	...	...	...	17 ounces.
Tartaric Acid, in powder	...	...	...	...	9 ounces.
Citric Acid, in powder	...	...	...	...	6 ounces.
Saccharin	...	...	...	...	8 grains.

Mix the powders thoroughly, place them in a dish or pan of suitable form heated to between 200° and 220° F. (93°·3 and 104°·4 C.), and when the particles of the powder begin to aggregate, stir them assiduously until they assume a granular form; then, by means of suitable sieves, separate the granules of uniform and most convenient size, and preserve the preparation in well-closed bottles.

Dose.—50 to 90 grains; or one or two small teaspoonfuls.

The presence of only eight grains of saccharin in the place of five ounces of sugar (in the above quantity), results in this preparation being one-sixth stronger than the Sodii Citro-tartras Effervescens, B.P.—usually regarded as the official substitute for the popular, but wrongly termed, Granular “Citrate of Magnesia”—consequently, the dose is slightly less.

SEIDLITZ POWDERS.

As some persons add sugar to seidlitz powders, so a few grains of saccharin may be incorporated; say four grains in one dozen powders, in the blue paper portions.

SHERBET.

Take of

Bicarbonate of Sodium	...	...	...	...	...	...	5 ounces.
Tartaric Acid, in powder	...	...	...	...	...	...	5 ounces.
Saccharin	...	...	...	...	...	...	24 grains.

Dry the bicarbonate of sodium and the tartaric acid separately. Mix the saccharin with the dry bicarbonate of sodium, and add

Oil of Lemon	1 fluid drachm.
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Add the tartaric acid, and mix. Preserve the sherbet in a dry, well-corked bottle.

GINGER BEER POWDERS.

Take of

Ginger, in powder	...	...	...	...	...	...	60 grains.
Bicarbonate of Sodium	...	...	...	...	...	...	300 grains.
Saccharin	...	...	...	...	...	...	4 grains.
Oil of Lemon	...	...	...	...	...	...	8 minims.

Mix thoroughly. Divide into twelve equal portions, wrapping each in blue paper.

Tartaric Acid, in powder	360 grains.
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Divide into twelve equal portions, wrapping each in white paper.

Directions for use.—Mix the contents of a blue packet with a tumblerful of water; add the contents of a white packet; stir, and drink during effervescence.

LEMONADE POWDERS.

Take of

Bicarbonate of Sodium	...	...	...	...	...	...	300 grains.
Saccharin	...	...	...	...	...	...	4 grains.
Oil of Lemon	...	...	...	...	...	...	15 minims.

Mix thoroughly. Divide into twelve equal portions, wrapping each in blue paper.

Tartaric Acid, in powder	360 grains.
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Divide into twelve equal portions, wrapping each in white paper.

Directions for use.—Mix the contents of a blue packet with a tumblerful of water; add the contents of a white packet; stir, and drink during effervescence.



