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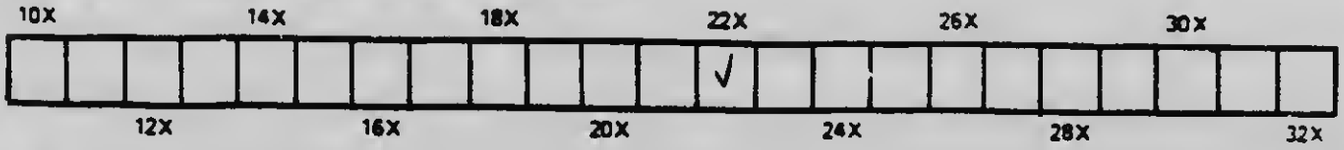

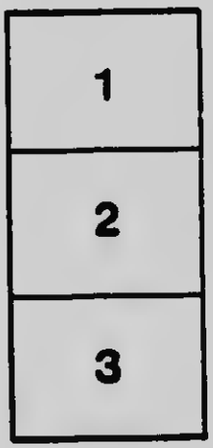

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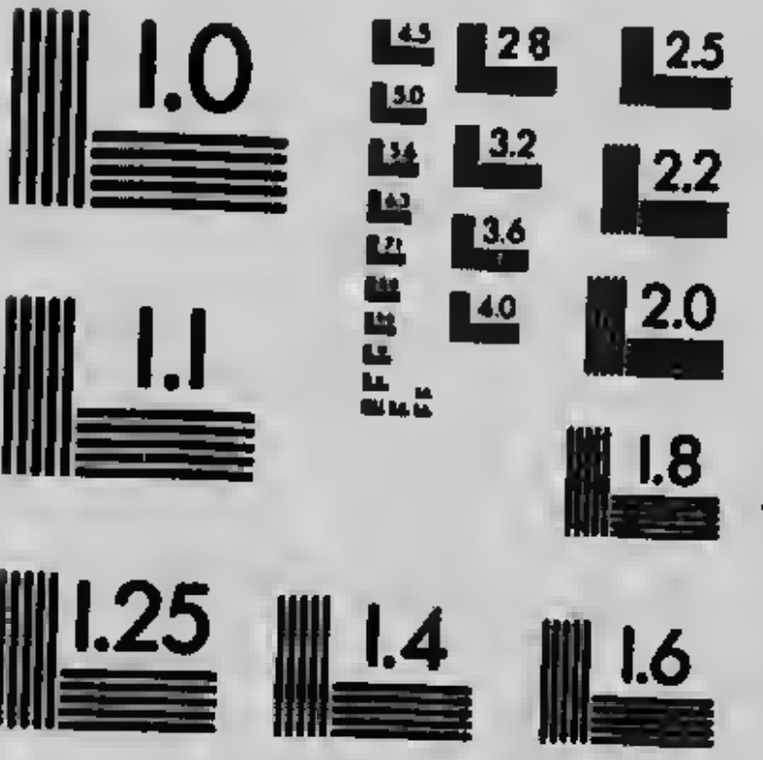

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Do we need any defence system in Canada?

THE VALOUR of IGNORANCE

A Plea for Canadian Defence

Reprint by

Canadian Defence League
Room 212, St. James' Chambers
TORONTO, CANADA.

OBJECTS OF THE LEAGUE.

1.—To awaken the public mind to the serious importance of national defence, and to aid in bringing about the adoption of the most effective and economical system to that end.

2.—To carry on a non-political, educational campaign looking to the adoption of the principle of patriotic, unpaid, or universal naval or military training, in the belief that such training conduces to the industrial, physical and moral elevation of the whole people, and is essential to national safety.

3.—To co-operate with the various Provincial educational authorities, the Department of Militia and Defence, and the Trustees of the Strathcona Fund, in introducing physical and military training into the schools of Canada.

4.—To aid in securing the systematic physical and military training of all youths between the ages of fourteen and eighteen.

ORGANIZING COMMITTEE.

Lt.-Col. Wm. Hamilton Merritt (Chairman); Walter James Brown (Hon. Secretary); Rev. T. Crawford Brown, M. A.; J. T. Fotheringham, M.D.; Jas. L. Hughes; E. H. Keating, C. E.; Prof. W. Lash Miller; Mrs. S. Nordheimer.

The Valour of Ignorance

A Plea For Canadian Defence.

By Wm. Hamilton Merritt, Chairman Organizing Committee, Canadian Defence League.

Extracts from an address delivered on 9th March, 1911, before the Canadian Club of Hamilton.

As a general introduction, I feel bound to say that I take for granted that you value patriotism above commercialism, and Imperialism above continentalism. That your flag and nationality are in fact and in truth the most sacred thing in life to you, and for which each and every one of you would be ready to fight if it should be necessary to do so. Unless this is the spirit of our people, then Canada is indeed in a hazardous position, for unless such a feeling as this is really in the hearts of all of us, we shall not listen with sympathy to a demand for that self-sacrifice, which alone can keep alive in the world the nationality of any people.

I was much struck by an address by Baron Kikuchi of the Imperial University of Kyoto, given last year at the University of Toronto. The address was on the "Japanese Spirit," which through all the changes in that old and wonderful people they have preserved unimpaired. Their "Spirit" is virtually personal self-sacrifice for the benefit of the State, or, as defined by Baron Kikuchi, "Reverence for the Imperial house or dynasty, and reverence for their ancestors;" the practical carrying out of which includes "inuring the body to hardships and privations, and cultivating discipline, coolness and self-control."

What this national "Spirit" is capable of, was well exhibited in the late Russo-Japanese War. Can we say that this is the "spirit" of our people? Is it not—sad to relate—the opposite, and much more as described in a sermon by

Rev. Mr. Soares, professor of religious education in the University of Chicago? He said "we teach our youth in America to be self-reliant and make their own way. They become self-sufficient and their attitude is to take orders from no man. But religion demands obedience. St. Paul has taught us that we are not our own, but bought with a price. He, himself, took pride in the title of 'Slave of God.'"

VALOUR OF IGNORANCE.

My intention is to endeavor to say a few words to you on the subject of Canadian Defence, but under the title of "The Valour of Ignorance."

Some of you may have thought that my address is to be on the remarkable book of that name, by Homer Lea, published by Harper Brothers. While that is not quite the case, yet I intend to avail myself freely of Mr. Lea's logical deductions, for most of them apply with equal force to Canada as to the United States; practically the only difference being that the United States is building up a great navy to guard her shores, while Canada has been content up to the present, to rely on the navy of Great Britain.

We are enjoying the wonderful advantage—under the protecting aegis of the Old Motherland, who is staggering under the titanic financial load she is bearing alone—of now being able to perfect our plans for self-defence, which, under any other circumstances, would fall still-born into the lap of some land-hungry power.

From Homer Lea's work and other authorities, I shall try and prove to you, (1), that no people can remain as they are where there is indifference to the matter of defence, and convergence of interests with other nations; (2), that only physical and military excellence in a people can enlist the respect of other nations and keep them from absorbing

mere commercial peoples with inadequate protection; (3), that some day there must be an inevitable clash of interests and armaments between ourselves and our great neighbor; and(4),that the future hope of the British Empire demands that her boys and men have that physical and military training which brings health, discipline, respect, good manners, and safety to flag and country in its train.

Incredible as it may seem, yet I feel that the most difficult task we have is to convince our fellow-countrymen that there is any need for a real serious defence system, one in fact, not in name only. When we have done this, the battle for national safety will be more than half won.

TO STAND STILL IMPOSSIBLE.

(1) That no people can remain as they are where there is indifference to the matter of defence and convergence of interests with other nations.

In connection with this, Homer Lee says "National existence is not a haphazard passage of a people from an unknown beginning to an unforeseen end." . . . . . "Yet nations prefer to evade and perish rather than to master the single lesson taught by the washing-away of those that have gone before them. In their indifference and in the valour of their ignorance they depart, together with their monuments and constitutions, their vanities and gods."

Conan Doyle wrote recently in "The Last Galley" — a story on the fall of Carthage to Rome—"And they understood too late hat it is the law of Heaven that the world is given to the hardy and to the self-denying, whilst he who would escape the duties of manhood will soon be stripped of the pride, the wealth and the power which are the prizes manhood brings."

And you will perhaps remember--go-

ing a step further—that such a great writer and thinker as Ruskin was so warm an advocate of the strenuous in nation-building, that he wrote, "We talk of peace and learning, and of peace and plenty, and of peace and civilization, but I found that those were not the words which the muse of History coupled together; that on her lips the words were peace and sensuality, peace and selfishness, peace and death. I found, in brief, that all great nations learned their truth of word and strength of thought in war; that they were nourished in war, and wasted by peace; trained in war, and betrayed by peace—in a word, that they were born in war, and expired in peace."

INTERNATIONAL RESPECT.

(2). That only physical and military excellence in a people can enlist the respect of other nations and keep them from absorbing mere commercial peoples with inadequate protection.

Homer Lea points out the national suicide involved in excessive commercialism at the expense of defence precautions and a strenuous national life, he says, "Whenever a nation becomes excessively opulant and arrogant, at the same time being without military power to defend its opulance or support its arrogance, it is in a dangerous position. Whenever the wealth and luxury of a nation stands in inverse ratio to its military strength, the hour of its desolation, if not at hand, approaches. When the opulance and unmartial qualities of one nation stand in inverse ratio to the poverty and the military prowess of another, while their expansion is convergent, there results those inevitable wars wherein the commercial nation collapses and departs from the activities of mankind forever."

A lesson might be brought home from this that it might pay Canada better to do with a little less wealth, if it should

be necessary, while we gave more attention to our martial qualities and allow our neighbor a monopoly . the opulant and arrogant 'evelopment.

THE INEVITABLE CLASH.

(3) That some day there mus· be an inevitable clashing of interests and armaments between ourselves and our great neighbor.

I would like to remind ' ou of the history of the expansion of our great neighbor. The original territory, under the Peace of Paris in 1883, covered the territory east of the Mississippi and north of Florida. Then t' Province of Louisiana, the great central west, was purchased from France in 1803, and Florida from Spain in 1819. Texas, as a republic, was admitted in 1845, Great Britain was cuchred out of Oregon and Washington in 1846, and the remainder o' the west wrested from Mexico by v in 1848, save a small piece purchased from them in 1853. Then Alaska was bought from Russia in 1867, Hawaii was absoived, and the Philippines and Porto Rico were taken from Spain in 1898, and Tutuila (Samoan Is.) acquired in 1899. This does not include Cuba, and it constitutes more than a ten-fold increase to the 326,378 square miles of the original 13 States. Another thirteen-year period comes in, for it is an average of 13 years between each new acquisition.

The question as to whether our great neighbor has finished this tremendous expansion is ever an interesting one to us. One is due next year. Homer Lea has to say on this matter: "The continuation of this building, and the endless extension of the Republic, the maintenance of its ideals and the consummation, in a world-wide sense, of the aspirations of its founders, constitutes the only pure patriotism to which an American can lay claim, or in defence of, lay down his life."

"Expansion of a nation's boundaries is indicative, not only of its external growth, but of the virility of its internal constitution; the shrinkage of its boundaries, the external exemplification of its internal decay."

. . . . "The territorial dominions of the United States are not only those possessions governed by its laws, but that vast region of Mexico, the West Indies, Central and South America, which, as far as being causative of war, are as much under the political sovereignty of the United States as are the States of the Union. The preservation of the constitution is not more vital than the inviolability of the Monroe Doctrine."

. . . . "Of the world's territory that comes under the political jurisdiction of the Republic, two-thirds is covered by Mexico, Central and South America, capable of supporting three times as many empires as now divide Europe."

"The political responsibilities that this republic has so inconcernedly assumed in establishing its suzerainty over the Western Hemisphere and a tentative dominion over the Pacific are as vast," etc.

. . . . "The peace of the future must be, as in the past, an armed peace."

Continuing to quote from Homer Lea we find that he says: "In 1906 there were in England to each million of the population, eight murders committed, in Germany, four, and in the United States 118."

"This Republic exceeds all other civilized nations in crime." . . "Through the excessive criminality of any nation there will always exist concomitant violation of the rights and privileges of other countries as guaranteed to them by the usage of international law, and which must, in due time, culminate in war."

. . . . "The unlettered savage . . . . . evolved the very spirit of

human obligation that this great Republic is coming to know not of. Its disregard for such pacts is not only increasing, but its violations are, in many instances, unworthy of the nation's potential greatness."

SHOEING HORSES FOR CANADA.

I should like to give one extract from another source. It is from an article on the "Lessons of a Decade," by 2nd Lieut. and Brevet Captain Frederick Whittaker, who served in the Federal Cavalry during the Civil War. The article appeared first in the Army and Navy Journal in 1871, was reprinted in book form and again reproduced last year in the U. S. Cavalry Association Journal.

Under the head of shoeing of horses, the author says: "In the winter, both toe and heel corks on all the shoes should be used in slippery ice countries, as Canada. In mud countries they are not necessary. But, as our next war of any magnitude will probably be in the north, our horses will have to be roughed with toe and heel-corks for winter campaigning."

AN ENGLISH VIEW.

We might now briefly consider the views of an English thinker on Imperial lines. He is Mr. L. S. Amery, who was an editor of the London Times, and one of the leading military critics in the Empire. Mr. Amery said before the National Defence Association of England: "But the Indian frontier is by no means the most serious frontier problem we have to face. In Canada we have a frontier of nearly 4000 miles separating us from our greatest potential rival. There are many, I know, who, while admitting the reality of the danger from Germany, will refuse absolutely to face the even greater danger that may eventually arise from the expansion of the United States.

I know that the average politician who hates all unpleasant facts will say: "The Americans are our cousins and friends; war with them is unthinkable! Unthinkable! There is no such word in international politics. We have been at war with the United States in the past. We have more than once since then been on the verge of war with her—the last time, less than fourteen years ago, over Venczeula. In any case, no statesman has the right, whatever the circumstances, to stake the existence of his country on the hope that the friendship of a foreign country will continue indefinitely."

The same authority has stated recently: "As long as nations are separate nations, with frontiers that touch, with economic interests that may clash, they have always got to consider the possibility of war. We can be responsible for our own policy but we cannot be responsible for the policy of any other country. We cannot say who may be controlling the destinies of the United States 10 or 20 years hence, or what their attitude may then be towards Canada or towards the British Empire. More than that, international friendship is most securely based when it is based on respect as well as onmeregood-will. I don't think Canadians to-day can do otherwise than regard the problem gravely and seriously, with an earnest desire to maintain for 100 years more, as in the past 100 years, the friendship of the United States, but with the knowledge that such friendship can be maintained only by mutual respect and by our confidence in our power to defend our rights."

Let me go even a step further, and say that if we believe the history and the reasoning given by Mr. Homer Lea to be correct, it would appear to be certain that the rapidly converging lines and interests between ourselves and our

great neighbor can have but one issue, and the 'god of battles' alone can say who will come out on top. Howeyer, there is one thing, and one alone, which can postpone the evil day, and that is the development on our part of such a strength as to demand forebearance.

We now come to the important consideration as to whether we have that necessary strength to-day, or are now developing it.

DEFENCE AN OBLIGATION.

Take the world at large, we find that the same obligation that underlies the imposition of taxes and the education of children in all civilized countries is also applied in the case of defence of home and country. To qualify for playing his part in defence is held to be the duty of every man, but the manner in which this is carried out differs in each nation. The same general principles, however, are applied throughout, from the more drastic rendering of the idea by the French and German to that quite recently adopted in Australia and New Zealand. In the latter cases the defence education begins at as early an age as ten years, and extends to the 25th year of a man's life, the sacrifice of his time, however, amounting to little more than a week in the year.

This was the principle evolved by the first settlers in Canada, our French-Canadian brothers, adopted by our first British Governors, crystallized into law in our first Militia Act of 1808, and it was that more than anything else which saved our country in 1812-14.

There are, however, a few, a very few, of the peoples of the world, who have not this universal service principle. They are those whose marches are the ocean or other people whose offensive powers are a negligible quantity. In

this case large expenditures on a navy are resorted to, as in the case of Great Britain and the United States, and the power of the almighty dollar is depended on to procure a voluntary land defence force.

This being the condition of things, where does our beloved Canada stand? Sir Wilfrid Laurier said recently in Montreal that now we are a nation. Where do we stand among the nations of the world, or indeed among the nations that go to make up the British Empire? Facts and figures go to show that our position is absolutely unique, that no civilized nation occupies the position of disregard to the defence of country that is occupied to-day by Canada.

Until recently, China was the only country in the world which had a comparable defence policy to that of our country, but even China has joined the ranks with the progressive nations and expects to have 400,000 well armed and trained men in the field by the year 1913, and 1,185,000 in 1920. At present she has 160,000 effective soldiers with modern arms and training. Canada is the only country that dares to rely on a superintelligence, on editorials, on resolutions, and on peace-conferences, to compel the respect of her rivals.

AN INEXPENSIVE SYSTEM.

Now with regard to a few figures in support of the foregoing. Under our old discarded system, Nova Scotia alone trained more armed soldiers in 1866 than we did in all Canada last year at one-sixtieth the cost. To train 45,767 in 1866, Nova Scotia spent $114,460; to train some 40,000, the Dominion of Canada paid $6,749,275 in 1909.

For what we spend on our 40,000 volunteers, Switzerland can put 530,000 men in the field; Bulgaria, 381,000, and

Argentina, 500,000, and Sweden and Roumania, for their half a million men an average of less than half as much more expenditure.

In France there are 18 soldiers to guard each square mile.

In Canada a soldier has to guard 74 square miles.

In France there is one soldier to			3	"	of male population of military age
Germany	"	"	3	"	"
Austria	"	"	6	"	"
Russia	"	"	12	"	"
England	"	"	15	"	"
Canada	"	"	40	"	"

The cost per soldier to the country is:

Switzerland	13.52
Bulgaria	15.82
Italy	18.47
Sweden	23.26
Japan	31.48
France	35.70
Germany	40.78
Canada	112.50

Just think of the comparison between our militiaman and the trained Japanese soldier, to say nothing of the German, and yet our militiaman costs practically three times as much as the German, and four times as much as the Jap. In an inverse ratio, I would much dislike to wager on the issue if one-fourth the number of Japanese with their "spirit," armament, and training, were to be opposed to our Canadian forces with our present armament, organization, and training.

FACTS RE OVER-SEA INVASION.

Homer Lea says: "Germany, France or Japan can each mobolize in one month more troops, scientifically trained by educated officers, than this Republic could gather together in three years." . . . "Oceans no longer prevent the

successful invasion of distant lands, but on the other hand make such attack possible." . . . "Within a given time a single vessel of the Mauretania or Deutchland class could transport more troops from Europe to the American shores than could all the fleets of England have done at the time of the Revolution or War of 1812."

. . . . "Germany can transport to the United States a quarter of a million soldiers in a fortnight."

. . . . "While Japan has over 50,000 scientifically trained military officers, the United States has less than 4,000."

And Mr. Homer Lea shows that Japan also has fleets of available transports in which she can send at any time 200,000 from her armies of more than a million trained men.

The deductions from these quotations are obvious, that the matter of the defence of Canada, as a very important part of the British Empire, is a real, serious, live problem.

TRAINING IMPERATIVE.

(4) That the future hope of the British Empire demands that her boys and men have that physical and military training which brings health, discipline, respect, good manners, and safety to flag and country in its train.

While a great many people in Canada do not, or pretend that they do not, see the necessity for a defence system similar to that of other countries, yet practically all seem to be in accord with the advisability of our youth being trained in systems of physical training and discipline. Many even think every boy and young man the better for military training. Here then, are generally recognized benefits which come in the train of preparation for national safety.

In Australia and New Zealand Junior Cadets are trained from 10—14, senior cadets from 14—18, and all young men from 18—25 are obliged to put in an annual training with the defence forces.

Anyone who has been in a country where universal military training pertains, will have been much struck with the general smart, cleanly appearance of the people. An old German, with whom I once travelled, and who had lived for 30 years in England, said that if there were universal peace, he would advocate the adherence to the German system of military training, for the sake of health and humanity.

Homer Lea points out that "The German Empire possesses the greatest armament of any nation proportionate to its population; yet the entire army —considered as non-producers—consists of only 1.17 per cent. of the population, the other 98.53 per cent. carrying on their customary vocations."

The same author evidently does not hold that Boy Scouts, Rifle Clubs, Strathcona funds and the like, excellent and desirable as they are all are, are going to fill the place of a national defence system, for we find he says in his book:

"Rifle, pistol and all other similar civilian associations are not only negatively but positively harmful to the nation, inasmuch as they produce an erroneous conception of the knowledge and duties necessary to a modern soldier." And again: . . . . "With war near at hand, public evasion is found in the formation of shooting or rifle clubs, under the delusion that to shoot constitutes the sole duty of a soldier and is the source of all military success. . . . . To shoot is less important than to march; to shoot accurately less important than to obey implicitly; to kill less important than to survive."

If you have been able to follow my disjointed discourse, you will have discovered that I have good grounds for advocating the urgent necessity of an adequate defence system, and that in it there are distinct benefits to the individual and to the national morale.

Training in the use of arms does not mean war, but rather makes for peace. The Chinee says: "You may not need soldiers for a hundred years, but you cannot do without them for a single day." You remember that Lord Milner asked at Vancouver how we were going to protect our population and trade, or were we going to take a back seat? After pointing out that wars will be rarer, he said: "but every year and every day, not only on the rare occasions that nations actually fight the power of fighting exercises a silent, decisive influence on the history of the world. It is like the cash reserve of some great solvent bank. How often is it necessary to produce millions and actually use them? It is credit which determines the power and influence of nations, just as it does the fate of any business."

And when the time comes again when the invader is at the door, can we then be saved by the "Valour of Ignorance," can we repel the invader by bringing into force the obsolete leve en masse clause of our Militia Act? The answer to this is once more given by Homer Lea, when he says: "From the beginning of the formation of national entities until the present time, the idea of popular uprisings to repulse foreign invaders has ever been a universal conceit, an indelible vanity, that neither the erosion of ages has erased, not the deluges of blood issuing from them have washed away."

TINCTURÆ—(*Addenda foliæ lv. etc.*)

Names and Synonyms	Chief Ingredients	Process	Menstruum	Dose
I. Strength, 5 ozs. Chief Ingredient in a Pint, or 1 in 4, (so-called 25 per cent.)—One.				
Tinctura · Daturæ Seminum Tincture Datura Seeds.	Seeds, bruised.	Percolation.	Alcohol 70 p.c.	5 to 15 min.
II. Strength, 4 ozs. Chief Ingredient in a Pint, or 1 in 5 (so-called 20 per cent.)—Five.				
Aristolochiæ Tincture of Aristolochia. Tincture of Indian Serpentary.	Stem and root, 40 powd.	Percolation.	Alcohol 70 p.c.	30 to 60 min.
Kaladanæ Tincture of Kaladana. Tincture Pharbitis Nil.	Seeds, 40 powder.	Percolation.	Alcohol 70 p.c.	30 to 60 min.
Tinosporæ Tincture of Tinospora.	Stem, 20 powder.	Maceration.	Alcohol 60 p.c.	30 to 60 min.
Urgineæ Tincture of Urginea. Tincture of Indian Squill.	Bulbs, bruised.	Maceration.	Alcohol 60 p.c.	5 to 15 min.
Valerianæ Indicæ Ammon. Ammoniated Tincture Indian Valerian.	Rhizome and roots, 40 powd.; oils of nutmeg and lemon.	Maceration.	Alcohol 60 p.c.–(9) Sol. Ammon.–(1).	30 to 60 min.
III. Strength, 2½ ozs. Chief Ingredient in a Pint, or 1 in 8 (so-called 12½ per cent.)				
Adhatodæ Tincture of Adhatoda.	Leaves, 40 powder.	Percolation.	Alcohol 60 p.c.	30 to 60 min.
Alstoniæ Tincture of Alstonia. Tincture of Ditn Bark.	Bark, 20 powder.	Maceration.	Alcohol 60 p.c.	30 to 60 min.
Picrorhizæ Tincture of Picrorhiza. Tincture of Kali Kutki.	Rhizome, bruised.	Maceration.	Alcohol 45 p.c.	30 to 60 min.

PART II.

SOLID PREPARATIONS.

EMPLASTRA. (*Addenda foliæ lxxi.*)

Names and Synonyms.	Ingredients.	Strength.
I. Plasters having Miscellaneous Bases.		
Emplastrum: **Mylabridis** Mylabris Plaster.	Powd. mylabris beetle, yellow wax, lard, resin, soap plaster.	35 p.c. mylabris.
III. Plasters having a Resin-Plaster Basis.		
Mylabridis Calefaciens. Mylabris Warming Plaster.	Powd. mylabris beetle, yellow wax, resin, boiling water, soap and resin plasters.	1 mylabris in 25, or 4 p.c. mylabris.

PILULÆ. (*Addenda foliæ lxxx.*)

Names and Synonyms.	Ingredients.	Strength	Dose.
II. Containing Other Plant-Drug Bases.			
Pilula: **Ipecaccum Urginea.** Pill Ipecac. with Urginea. Pill Ipecac with Iodine Squill.	Comp. ipecac powd., urginea, ammoniacum and syrup of glucose.	3 Dover's powd. in 6. 5 p.c. opium.	4 to 8 grs.
Urgineæ Composita. Compound Urginea Pill. Comp. Iodine Squill Pill.	Iodine squill, ginger, ammoniacum, soap and syrup of glucose.	1 urginea in 4, nearly.	4 to 8 grs.

PULVERES. (*Addenda foliæ lxxxiii.*)

Pulvis: **Kaladanæ Compositus.** Comp. Kaladana Powder.	Kaladana, potassium acid-tartrate and ginger.	1 kaladanna in 3.	20 to 60 grs.
III. Astringent Powders.			
Buteæ Seminum. Powder of Butea Seeds.	Butea seeds, blanched, dried and powdered.	Astringent and anthelmintic.	10 to 20 grs.

RESINÆ. (*Addenda foliæ lxxxiv.*)

Names and Synonyms.	Sources.	Process.	Dose.
Kaladanæ Kaladana Resin. "Pharbitisin."	Seeds of *Ipomœa hederacea*.	Digest., perc. and precipitation.	2 to 8 grs.

UNGUENTA. (*Addenda foliæ xciv.*)

Names and Synonyms.	Process.	Strength.	Remarks.
II. Having Benzoated Lard for their Base.			
Unguentum:			
Mylabridis Mylabris Ointment.	Fusion & Digestion	1 in 10.	Digest 12 hrs. at 120°F. (48.9°C.)
Myrobalani Myrobalan Ointment.	Incorporation.	1 in 5.	Like Gall Ointment.
Myrobalani cum Opio Myrobalan Oint. with Opium.	Incorporation.	7.5 p.c. opium	Like Gall and Opium Ointment.
IV. Having both Hard and Soft Paraffins for their Base.			
Gynocardiæ Gynocardia Ointment. Chaulmoogra-Oil Ointment.	Fusion.	1 in 10.	

Acetum Opii or Black drop
1 — 10 Dose 5 ℈ 20 m.

PART I.

LIQUID PREPARATIONS OF THE BRITISH PHARMACOPOEIA.

ACETA. VINEGARS (MEDICATED).

Solutions of the active constituents of organic drugs, obtained by extraction with acetic acid, either strong or dilute.

PREPARATION.—The pharmaceutical processes involved in the preparation of the official vinegars are simple maceration for Acetum Scillæ, maceration combined with percolation for Acetum Cantharidis and dilution of the liquid extract for Acetum Ipecacuanhæ.

MENSTRUA.—All excepting vinegar of cantharadis are made with diluted acetic acid. The one mentioned is made with a menstruum of glacial acetic acid and water, equal volumes of each. Vinegar of ipecacuanha contains 10 p.c. of alcohol, 90 p.c.

Acetic acid is a good solvent and possesses antiseptic properties as well. It readily combines and forms soluble salts with alkaloids, if the drugs acted upon contain these principles.

STORING.—Vinegars should be stored in tall bottles of small diameter, to enable pouring off of clear liquid from copious sediments deposited by this class of preparations.

ACETA.

Three Official Vinegars.

NAMES AND SYNONYMS.	INGREDIENTS.	STRENGTH.	DOSE.
Acetum:			
Cantharidis Vinegar Cantharides.	Cantharides, bruised.	1 in 10.	Externally
Ipecacuanhæ Vinegar Ipecacuanha. Vinegar Ipecac.	Liq. Ext. Ipecacuanha.	1 liq. ext. in 20, or 0·1 grain alkaloids in 110 mins., or, 0·1 Gm. in 100 c.m³	10-30 min.
Scillæ Vinegar Squill.	Squill, bruised.	1 in 8.	10-30 min.

ACIDA. ACIDS.

Compounds of electro-negative radicals, or halogens, with basic hydrogen, which hydrogen may be displaced by a basylous radical, to form a salt.

The FORMULA of an acid, is a group of symbols showing its composition or structure.

A Chemical formula may be, I. EMPIRICAL, when it expresses the simplest ratio of atoms which make up the compound, *e.g.* CH_2O is the empirical formula for hydrogen acetate, $Fe(HO)_3$ for ferric hydroxide.

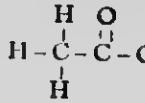
II. MOLECULAR, when it expresses the actual number of atoms of each element in a molecule; it may be identical with the empirical formula, or a multiple of it, *e.g.* $C_2H_4O_2$ is the molecular formula for hydrogen acetate and $Fe_2(HO)_6$ for ferric hydroxide.

Molecular formulas may be,

(*a*) TYPICAL, when the atoms are arranged after a certain type; the most common types are water, HOH, and hydrogen chloride, HCl, *e.g.* $HO(C_2H_3O)$ is hydrogen acetate arranged on the water type, $H(C_2H_3O_2)$ the same on the hydrogen chloride type.

When written after the water type, the number of hydroxyl (HO) groups indicates the basicity of the acid, the hydrogen of each group being replaceable by a base or a basylous radical, while if expressed after the hydrogen chloride type, the number of hydrogen atoms indicated in the basic position, *i.e.* at the left of the acidulous radical, determines the basicity.

(*b*) GRAPHIC, when the constitutional composition of the compound is shown by means of connecting bonds; also termed *Structural* or *Constitutional*, *e.g.* CH_3-COOH, is a graphic formula for hydrogen acetate, or when fully written out.



The number of oxytyl (COOH) groups present indicate the basicity, the hydrogen of each group being the replaceable hydrogen of the acid.

ADMINISTRATION.—The acids which are to be taken internally, should be largely diluted with water beforehand, and the mouth and teeth well rinsed with water afterwards.

CLASSIFICATION.—Both liquid and solid acids are classified together in the following table, for the sake of convenience. "Strength" refers to the percentage *by weight*, of absolute acid, contained in the compound.

General doer of Dil Rig 5- 20.
" " " Solid 5- 15.

Caustic & Explosion

ACIDA.

Twenty-nine Official Acids

Names and Synonyms.	Strength and Specific Gravity.	Chemical Composition.	Dose.
Acidum:			
Aceticum Acetic Acid.	33 per cent. Specific gravity, 1·044.	$HC_2H_3O_2$ or CH_3COOH. Mol. wt. 59·58.	Externally.
Aceticum Dilutum Diluted Acetic Acid.	4·27 per cent. Specific gravity, 1·006.	$HC_2H_3O_2$ or CH_3COOH.	½ to 2 fl. dr.
Aceticum Glaciale Glacial Acetic Acid.	99 per cent. Specific gravity, 1·058.	$HC_2H_3O_2$ or CH_3COOH.	Externally.
Arseniosum Arsenious Anhydride. Arsenious Oxide. Arsenious Acid. White Arsenic. Arsenic.	100 per cent. White solid.	As_4O_6. Mol. wt. 393·28.	1-60th to 1-15th gr.
Benzoicum Benzoic Acid. Hydrogen Benzoate.	100 per cent. White crystals.	$HC_7H_5O_2$ or C_6H_5COOH. Mol. wt. 121·73.	5 to 15 grains.
Boricum Boric Acid. Boracic Acid. Hydrogen Borate.	100 per cent. Colorless crystals.	H_3BO_3 or $(HO)_3B$. Mol. wt. 61·49.	5 to 15 grains.
Carbolicum Carbolic Acid. Phenol. Phenylic Alcohol.	100 per cent. Sp. gr. 1·060-1·066.	C_6H_5OH. Mol. wt. 93·34.	1 to 3 grains.
Carbolicum Liquefactum Liquefied Carbolic Acid. Liquefied Phenol.	90·9 per cent. Sp. gr. 1·064-1·069.	C_6H_5OH. Mol. wt. 93·34.	1 to 3 min.
Chromicum Chromic Acid. Chromic Anhydride. Chromic Oxide.	100 per cent. Crimson crystals.	CrO_3. Mol. wt. 99·38.	Externally.
Citricum Citric Acid. Hydrogen Citrate.	100 per cent.	$H_3C_6H_5O_7 \cdot H_2O$ or $C_3H_4 \cdot OH \cdot (COOH)_3, H_2O$ Mol. wt. 208·5.	5 to 20 grains.
Gallicum Gallic Acid. Trihydroxybenzoic Acid.	100 per cent.	$HC_7H_5O_5 \cdot H_2O$ or $C_6H_2(OH)_3 \cdot COOH, H_2O$. Mol. wt. 186·65.	5 to 15 grains.
Hydrobromicum Dilutum Diluted Hydrobromic Acid. Diluted Bromhydric Acid.	10 per cent. Specific gravity, 1·077.	HBr. Mol. wt. 80·35.	15 to 60 min.

ACIDA—*Continued.*

Names and Synonyms.	Strength and Specific Gravity.	Chemical Composition.	Dose.
Acidum:			
Hydrochloricum Hydrochloric Acid. Muriatic Acid. Chlorhydric Acid. Spirit of Salt.	31·79 per cent. Specific gravity, 1·160.	HCl. Mol. wt. 36·19.	Externally.
Hydrochloricum Dilutum Diluted Hydrochloric Acid.	10·58 per cent. Specific gravity, 1·052.	HCl. Mol. wt. 36·19.	5 to 20 min.
Hydrocyanicum Dilutum Diluted Hydrocyanic Acid. Diluted Prussic Acid. Diluted Cyanhydric Acid.	2 per cent. Specific gravity, 0·997.	HCN. Mol. wt. 26·85.	2 to 6 min.
Lacticum Lactic Acid. Hydrogen Lactate.	75 per cent. Specific gravity, 1·21.	$HC_3H_5O_3$ or $CH_3.CHOH\cdot COOH$. Mol. wt. 89.37.	*(5 to 15 min.)*
Nitricum Nitric Acid. Azotic Acid. Aqua Fortis.	70 per cent. Specific gravity, 1·42.	HNO_3 or $HONO_2$. Mol. wt. 62·58.	Externally.
Nitricum Dilutum Diluted Nitric Acid.	17·44 per cent. Specific gravity, 1·101	HNO_3 or $HONO_2$. Mol. wt. 62·58.	5 to 20 min.
Nitro-Hydrochlor. Dil. Diluted Nitro-Hydrochloric Acid, Diluted Nitro-Muriatic Acid. Aqua Regia.	Specific gravity, 1·07.	Contains Cl., HCl., HNO and HNO_{22}	5 to 20 min.
Oleicum Oleic Acid. Elaic Acid. Hydrogen Oleate.	100 per cent. Sp. gr., 0·890-0·910.	$HC_{18}H_{33}O_2$ or $CH_3\cdot(CH_2)_7\cdot CH{:}CH(CH_2)_7\cdot COOH$. Mol. wt. 280·14.	
Phosphoricum Concentratum Conc. Phosphoric Acid. Concentrated Ortho-Phosphoric Acid.	66·3 per cent. Specific gravity, 1·500.	H_3PO_4 or $(HO)_3PO$. Mol. wt. 97·32.	*(1 to 4 min.)*
Phosphoricum Dilutum Diluted Phosphoric Acid.	13·8 per cent. Specific gravity, 1·08.	H_3PO_4 or $(HO)_3PO$. Mol. wt. 97·32.	5 to 20 min.
Salicylicum Salicylic Acid. Hydrogen Salicylate.	100 per cent. Colorless xtals. Soluble in water 500, Alcohol 3.	$HC_7H_5O_3$ or $C_6H_4\cdot OH\cdot COOH$. Mol. wt. 137·01.	5 to 20 grains
Sulphuricum Sulphuric Acid. Oil of Vitriol.	98 per cent. Specific gravity, 1·843	H_2SO_4 or $(HO)_2SO_2$. Mol. wt. 97·34.	

Schedule 4 to 5% HCN Dose 1 to 2 m
used in heparin solution.

used in ointments of alkaloids
& in oleates.

same as H_2SO_4 aromat.

Aqua Destillati

By distillation of natural good potable H_2O.

H_2O. 10 pt reject first ½ pt
(air. CO_2. Cl. NH_3. etc if present:)
8 pt are distilled & collected
remainder is discarded
to Exclude saline Matter (carbon
& decomp. products from NH_3 combs
& organic matter
should be used in Collyria

In sol $AgNO_3$
" " $HgCl_2$ lead & Zinc Salts
& of alkali Salts

Boiling water no good.

ACIDA—*Continued.*

Names and Synonyms.	Strength and Specific Gravity.	Chemical Composition.	Dose.
Acidum:			
Sulphuricum Aromaticum Aromatic Sulphuric Acid. Elixir Vitriol.	11·8 per cent. Sp. gr. 0·922—0·926.	H_2SO_4 with $C_2H_5HSO_4$.	5 to 20 min.
Sulphuricum Dilutum Diluted Sulphuric Acid.	13·65 per cent. Specific gravity, 1·094.	H_2SO_4 or $(HO)_2SO_2$. Mol. wt. 97·34.	5 to 20 min.
Sulphurousum Sulphurous Acid.	5 per cent. SO_2. 6·4 per cent. H_2SO_3. Specific gravity, 1·025.	H_2SO_3 or $(HO)_2SO$. Mol. wt. 81·46.	½ to 1 fl. dr.
Tannicum Tannic Acid. Gallotannic Acid. Tannin.	100 per cent. Crystalline powder.	$C_{14}H_{10}O_9{\cdot}2H_2O$. Mol. wt. 355·42.	2 to 5 grains.
Tartaricum Tartaric Acid. Hydrogen Tartrate.	100 per cent. Colorless crystals.	$H_2C_4H_4O_6$ or $CH{\cdot}OH{\cdot}COOH$ $CH{\cdot}OH{\cdot}COOH$. Mol. wt. 148·92.	5 to 20 grains.

AQUÆ. WATERS (Medicated).

Aqueous solutions of volatile substances.

Medicated waters are, as a class, mainly simple aromatics, commonly used as vehicles for the administration of the more potent or unpleasant medicinal substances, imparting to them an agreeable flavor and warm carminative qualities. Cherry Laurel Water must be noted as the exception, it being a highly dangerous preparation, owing to the quantity of prussic acid which it contains; it is standardized to one-tenth per cent. of hydrogen cyanide.

Preparation.—Two of the waters are prepared by *Simple Solution*, viz. *Aquæ Camphoræ, Chloroformi*, while the others are made by *Distillation;* ten by distilling water with which the crude plant-drug has been well mixed, viz., *Aquæ Anethi, Anisi, Aurantii Floris, Carui, Cinnamomi, Fœniculi, Laurocerasi, Pimentæ, Rosæ, Sambuci*; while two, *Aquæ Menthæ Piperitæ, Menthæ Viridis*, are made by distilling the corresponding essential oil with water.

Aq. Aurantii Flor. et Aq. Rosæ are not prepared by the pharmacist, but are imported from the manufacturers of volatile oils, who recover them as a by-product of the extraction of volatile oils: these represent

AQUÆ. WATERS—*Continued.*

saturated solutions of the corresponding essential oils obtained from fresh flowers. They are "triple strength," so-called, and are to be diluted before using with two volumes of distilled water. They should show no reactions for lead, a contamination emanating from the metallic containers in which they are stored and shipped.

ALTERNATIVE PREPARATIONS.—For use in India and other tropical countries, the B.P. sanctions the substitution of the following Waters in place of the corresponding Aquæ of the text of the Pharmacopœia.

AQUÆ OLEI ANETHI, ANISI, CARUI, CINNAMOMI, FŒNICULI, MENTHÆ PIPERITÆ, MENTHÆ VIRIDIS, PIMENTÆ.—Triturate the corresponding essential oil with twice its weight of calcium phosphate, and five hundred times its volume of distilled water, and filter the mixture.

STORING OF WATERS.—The occasional appearance of *conferva* in certain of the medicated waters which renders them unsightly and unfit for dispensing, is due to the presence of sporules derived from the air, and may be prevented by keeping in bottles so arranged that air can enter only after having passed through a layer of cotton, with which the neck of the bottle may be plugged, before inserting the stopper.

UNOFFICIAL METHODS.—The carbonates of magnesium or calcium are sometimes used instead of calcium phosphate, in the extemporaneous preparation of waters—a decidedly objectionable process, as, owing to their solubility (though slight), the resulting waters are faintly alkaline, and will cause decomposition with many metallic and alkaloidal salts, with which they may be dispensed.

AQUÆ.

Fifteen Official Waters, including Aqua Destillata

NAMES AND SYNONYMS.	INGREDIENTS AND PROCESS.	STRENGTH.	DOSE.
Aqua:			
Anethi Dill Water.	Fruit, bruised. Distillation.	1 in 10.	(½ to 2 fl. ozs.)
Anisi Anise Water.	Fruit, bruised. Distillation.	1 in 10.	(½ to 2 fl. ozs.)
Aurantii Floris Orange Flower Water. Aqua Naphæ.	Bitter orange flowers, fresh. Distillation.	Sat. sol. of essential oil.	(½ to 2 fl. ozs.)
Camphoræ Camphor Water. Mistura Camphoræ. B.P.	Camphor and Alc. Solution.	1 in 1000.	(1 to 2 fl. ozs.)

Hot water with

Vol. oil put on felter shredded & shaking with hot H2O, air light & filter good

No official dose except:
Aq. S. C. ½ – 2 3.
General Dose ½ – 2.

Dissolve Camphor in small amt of alcohol and poured in in portions & great agitation.

Liquor Hammamelidis (is really a water)
water dest + twigs + Alcohol added
to keep (20% of alcohol)

By the same method as dil H Cn is +
standardized

AQUÆ—*Continued.*

Names and Synonyms.	Ingredients and Process.	Strength.	Dose.
Aquæ:			
Carui Caraway Water.	Fruit, bruised. Distillation.	1 in 10.	(½ to 2 fl. ozs.)
Chloroformi Chloroform Water.	Chloroform & water. Solution.	1 in 400. (vol.)	(½ to 2 fl. ozs.)
Cinnamomi Cinnamon Water.	Bark, bruised. Distillation.	1 in 10.	(½ to 2 fl. ozs.)
Destillata Distilled Water.	Water. Distillation.		
Fœniculi Fennel Water.	Fruit, bruised. Distillation.	1 in 10.	(½ to 2 fl. ozs.)
Lauroceras Cherry-Laurel Water.	Leaves, fresh. Distillation and Standardization.	Standardized to 0.1 p.c. HCN.	½ to 2 fl. drs.
Menthæ Piperitæ Peppermint Water.	Oil of peppermint. Distillation.	1 in 1500.	(½ to 2 fl. ozs.)
Menthæ Viridis Spearmint Water.	Oil of spearmint. Distillation.	1 in 1500.	(½ to 2 fl. ozs.)
Pimentæ Pimento Water. Allspice Water.	Fruit, bruised. Distillation.	1 in 20.	(½ to 2 fl. ozs.)
Rosæ Rose Water.	Flowers, fresh. Distillation.	Sat. sol. of essential oil.	(½ to 2 fl. ozs.)
Sambuci Elder-Flower Water.	Flowers, fresh. Distillation.	100 p. c.	(½ to 2 fl. ozs.)

COLLODIA. COLLODIONS.

Solutions, for external use only, of pyroxylin (gun cotton) in acetic ether, or in a mixture of ether and rectified spirits, either with or without medication.

Uses.—When collodions are to be applied to a dry surface, the ether (and alcohol, if present) quickly evaporates, leaving a more or less adhesive film upon the skin, which is not affected by water.

The unmedicated collodions are often used instead of adhesive or isinglass plaster, for the purpose of covering and protecting abraded surfaces or ulcers, or to hold together the edges of minor wounds, or to prevent bed sores. The powerfully contractile power of *Collodium* often renders its use painful, hence *Collodium Flexile* is usually preferred, owing to the fact, that, on the evaporation of the volatile solvent, a soft, elastic film remains.

COLLODIA. COLLODIONS—*Continued.*

Collodion furnishes a medium whereby many important medications may be applied externally, *e.g.* iodine, mercuric chloride, salicylic acid, tannin, extract Indian hemp, croton oil, resorcin, iodoform, alkaloids, etc. —in fact almost any ether-soluble substance.

DISPENSING.—On account of the volatile nature of ether, the collodion should be kept in tightly corked bottles in a cool place, and because of the inflammable nature of both the pyroxylin and the ether-alcohol, it should not be dispensed or applied in proximity to a light or fire.

Inasmuch as collodions are almost invariably to be applied by means of a camels-hair pencil, modern pharmaceutical practices prompt their being dispensed in bottles containing stoppers arranged for holding the brush, to prevent the latter from drying out—a very annoying occurrence. No collodion should be permitted to remain on the tip of the bottle, to avoid "setting" the cork.

COLLODIA.

Three Official (one simple and two compound) Collodions.

TITLES.	SYNONYMS.	INGREDIENTS.	REMARKS.
Collodium	Collodion. Contractile Collodion.	Pyroxylin 1 in 48. Ether and Alc.	Yields closely adhering film.
Collodium Flexile	Flexible Collodion. Collodium Elasticum.	Can. Balsam 2 Castor oil 1 Collodion 48	Yields an elastic film.
Collodium Vesicans	Blistering Collodion. Cantharidal Collodion.	Pyroxylin 1 Blistering liquid 40	Epispastic and vesicant.

DECOCTA. DECOCTIONS.

Solutions of the active principles of plant-drugs, together with extractive, obtained by boiling with water.

PREPARATION.—Boiling the coarsely comminuted drug with water for ten minutes to one hour in a covered vessel, straining when cold, and then pouring enough distilled water over the contents of the strainer to make the required volume.

In preparing decoctions, *cold* water is to be used at the outset, thereby enabling the complete extraction from the drug of all of its soluble principles, by the gradually heated water, subsequent coagulation of the albuminous matter taking place as the heat is increased to near the point of

Dispense in special Bottles
Keep free from fire when applying
Carbolic acid cannot be mixed
+ Collodion as it coagulates

It is not combustible ∴ Causes no pain.

Destinguish from infusion albumen is got rid of after Constituents are extracted

Only made for direct use
Dent. Fillers

Two more as found in aderdeen
(see one to front)
Agropyri (Triticum Repens Ext.)
Gossypii Red C. (Cotton Root)

Pot. Carb. Converts resins to Soaps
∴ holds in sol.
~~Aloes~~
Alc & Tr Card of C are antiseptic
Doses are uniform.

ebullition. If the drug were to be at once placed into boiling water, the albuminous contents of the cells would become coagulated, and thus greatly hinder the extraction of other native constituents.

INCOMPATIBLES.—Salts of the heavy metals yield unsatisfactory dark-colored preparations (chiefly tannates) owing to the presence of tannin in most drugs represented in the Decoctions. For the same reason, these preparations should never be made in metallic vessels.

CAUTION.—The dilution of fluid extracts or other concentrated *alcoholic* preparations, for the purpose of furnishing Decoctions extemporaneously, is reprehensible on therapeutical grounds, as rarely do the alcoholic preparations contain the same plant constituents that may be extracted with water.

CONCENTRATED DECOCTIONS.—A number of decoctions have been deleted from the Pharmacopœia, so that at present, three only are recognized under the specific title. A *concentrated* decoction is, however, official under the title *Liquor Sarsæ Compositus Concentratus*, Concentrated Compound Solution of Sarsaparilla, evidently intended to be diluted with seven times its volume of water, to yield a preparation of the same strength as *Decoctum Sarsæ Compositum* of the obsolete Pharmacopœia of 1885, differing from it only in that the *Liquor* will contain a small quantity of ethylic alcohol.

The *Concentrated Liquor* contains sarsaparilla, sassafras, guaiacum wood, liquorice root and mezereon bark. The process involves infusion and decoction, and to the evaporated solution, alcohol, 90 per cent., is added, as a preservative.

DECOCTA.

Three Official Decoctions.

NAMES AND SYNONYMS.	INGREDIENTS.	STRENGTH.	DOSE.
Decoctum:			
Aloes Compositum Comp. Decoction Aloes. Baume de Vie.	Ext. Aloes, myrrh, saffron, potass. carb., ext. liquorice, comp. tinct. cardam. and water.	Ext. aloes 1 in 100	½ to 2 fl. oz.
Granati Corticis Decoct. Pomegranate Root.	Bark, 10 powd.	1 in 5	½ to 2 fl. oz.
Hæmatoxyli Decoction Logwood.	Heart-wood, chips and bruised cinnamon bark.	1 logwood in 20	½ to 2 fl. oz.

EXTRACTA LIQUIDA. LIQUID EXTRACTS.

Permanent, concentrated solutions of the active constituents of plant drugs, of such a strength, that one minim represents the medicinal activity of about one grain of powdered drug.

Exceptions to genera. strength, are: Liquid Extract of Male Fern, which is an oleo-resin and does not properly belong to this class of preparations, and is four to five and one-half times the strength of liquid extracts; the Standardized Liquid Extracts.

AQUEOUS LIQUID EXTRACTS.—The liquid extracts made by extraction with water, viz.: Cascara sagrada, cinchona, glycyrrhiza, opium and pareira, have alcohol, 90 per cent., added toward the end of the process, in varying proportions, for preservation. In order to protect these preparations from fermentation, in India and other tropical countries, the proportion of added alcohol may be increased, to an extent not exceeding one-fourth of the weight of the liquid extract.

STANDARDIZED LIQUID EXTRACTS.—Seven of the official liquid extracts are standardized, to ensure the presence of a definite amount of alkaloidal constituents, or of extractive. Five of this number, are assayed during their preparation, and made up to the volume required to represent a specified alkaloidal strength, they are,

LIQUID EXTRACT:

Belladonna, containing 0·75 grains alkaloids in 110 minims (0·75 gram in 100 c.m³);
Cinchona, " 5·00 grains alkaloids in 110 minims (5·00 grams in 100 c.m³);
Ipecacuanha, " 2 to 2·25 grains alkaloids in 110 minims (2 to 2·25 grams in 100 c.m³);
Nux Vomica, " 1·5 grain strychoine in 110 minims (1·5 grams in 100 c.m³);
Opium, " 0·75 grain morphine in 110 minims (0·75 gram in 100 c.m³);
or 16·5 grains extract of opium in a fluid ounce.

Two are required to contain an established percentage of extractive, viz.: Liquid Extract Glycyrrhiza, the percolate from which is to be evaporated to specific gravity 1·200, before adding alcohol; Liquid Extract Pareira is made to contain 25 per cent. of extractive.

Ser
agropyri
Glaucypsis
Verb Prunifol.

PHARMACEUTICAL PROCESSES.—The processes involved in preparing this class of preparations are: percolation, re-percolation and maceration.

PRESERVATION.—Should be kept in tightly corked bottles of dark-amber glass, or protected from light and extremes of temperature. Sediments which occur through slight changes of temperature, should be investigated, and if inert, should be removed by filtration, but if active, should be re-suspended by shaking, before dispensing.

EXTRACTA LIQUIDA.

Seventeen Official Liquid (or Fluid) Extracts.

NAMES AND SYNONYMS.	INGREDIENTS.	PROCESS.	MENSTRUUM.	DOSE AND REMARKS.
Extractum Liquidum:				
Belladonnæ Liq. Ext. Belladonna.	Root, 20 powder.	Repercolation and Standardization.	Alc., 90 p.c.-7, water-1.	store[illegible]
Cascaræ Sagradæ Liq. Ext. Cascara Sagrada. Liq. Ext. Rhamnus Purshiana.	Bark, 40 powder.	Percolation and Evaporation.	Water.	½ to 1 fl. dr.
Cimicifugæ Liq. Ext. Cimicifuga. Liq. Ext. Black Cohosh. Liq. Ext. Black Snake Root. Liq. Ext. Actæa.	Rhizome, 60 powder.	Mac. and Perc.	Alcohol, 90 p.c.	5 to 30 min.
Cinchonæ Liq. Ext. Cinchona. Liq. Ext. Red Cinchona.	Red bark, 60 powder.	Mac. Perc. Evap. Standardization.	Hydrochloric acid glycerin & water 12½% alcohol	5 to 15 min.
Cocæ Liq. Ext. Coca. Liq. Ext. Erythroxylon.	Leaves, 20 powder.	Mac., Perc. and Evaporation.	Alcohol 60 p.c.	½ to 1 fl. dr.
Ergotæ Liq. Ext. Ergot.	Crushed ergot.	Digest. and Evap.	Water.	10 to 30 min.

see front page

Cocaine for Identific

EXTRACTA LIQUIDA—*Continued.*

Names and Synonyms.	Ingredients.	Process.	Menstruum.	Dose and Remarks.
Extractum Liquidum				
Filicis Liq. Ext. Male Fern. Oleo-Resin Male Fern.	Rhizome, 20 powder.	Perc. and Evap.	Ether.	45 to 90 min.
Glycyrrhizæ Liq. Ext. Glycyrrhiza. Liq. Ext. Liquorice.	Root, 20 powder.	Mac., Evap. and Standardization.	Water.	½ to 1 fl. dr.
Hamamelidis Liq. Ext. Witch Hazel. Liq. Ext. Hamamelis.	Leaves, 40 powder.	Percolation.	Alcohol 45 p.c.	5 to 15 min.
Hydrastis Liq. Ext. Golden Seal.	Rhizome, 60 powder.	Percolation.	Alcohol 45 p.c.	5 to 15 min.
Ipecacuanhæ Liq. Ext. Ipecacuanha. Liq. Ext. Ipecac.	Root, 20 powder.	Perc., Dist. and Standardization.	Alcohol, 90 p.c., and calcium hydroxide.	Expectorant, ½ to 2 min. Emetic, 15 to 20 min.
Jaborandi Liq. Ext. Jaborandi. Liq. Ext. Pilocarpus.	Leaves, 20 powder.	Percolation.	Alcohol 45 p.c.	5 to 15 min.
Nucis Vomicæ Liq. Ext. Nux Vomica.	Beans, 20 powder.	Percolation and Standardization.	Alcohol 70 p.c.	1 to 3 min.
Opium Liq. Ext. Opium.	Extract of opium.	Solution and Standardization.	Water.	5 to 30 min.
Pareiræ Liq. Ext. Pareira Brava.	Root, 40 powder.	Mac., Perc., Evap. Standardization.	Boiling Water.	½ to 2 fl. dr.
Sarsæ Liq. Ext. Sarsaparilla. Liquor Sarsæ.	Root, 40 powder.	Repercolation and Evaporation.	Alcohol 20 p.c.	2 to 4 fl. dr.
Taraxaci Liq. Ext. Taraxacum. Liq. Ext. Dandelion.	Root, 20 powder.	Mac. and Evap.	Alc., 60 p.c., followed by water	½ to 2 fl. dr.

Never Vom true 70% alcohol only to
avoid exhaustion of fixed oil!

Glycerine is a good solvent:
Good for Paints
Not so efficient for astringents
as water.

Ac Carbolic Glycerin is miscible
with water.

Starch Gly. must be heated
stronger but not burned
In Borax (Boracic is preferable
:: incomp ✝ Carbonates &c.

GLYCERINA. GLYCERINS. (Glyceroles. Glycerites.)

Stable solutions of medicinal substances in glycerin. They are principally prepared by triturating the medicating ingredient with glycerin, in some instances completing the solution by heating, with constant stirring. Glycerin of Pepsin and Glycerin of Lead Subacetate are prepared by digestion.

Permanency.—Glycerins keep well, owing to the antiseptic properties of the solvent and vehicle, which protects sensitive compounds from oxidation and change, yielding permanent solutions, which are readily miscible with water, even though they may contain oily or resinous substances.

The strengths indicated in the subjoined table are only approximate.

GLYCERINA.

Nine Official Glycerins.

Names and Synonyms.	Ingredients.	Strength.	Dose and Remarks.
Glycerinum:			
Acidi Borici Glycerin of Boric Acid. Glycerin of Boro-Glycerin. Glycerin of Glyceryl Borate. Solution of Bo[illegible]eride.	Boric acid and glycerin.	50 per cent. boro-glycerin or 1 boric acid in 3⅓ (wt.).	
Acidi Carbolic. Glycerin of Carbolic Acid. Glycerin of Phenol.	Carbolic acid and glycerin.	1 in 7¼ (wt.). 1 in 5 (vol.).	(5 to 20 min.)
Acidi Tannici Glycerin of Tannic Acid. Glycerin of Tannin.	Tannic acid and glycerin.	1 in 7¼ (wt.). 1 in 5⅓ (vol.).	(10 to 40 min.)
Aluminis Glycerin of Alum.	Alum, water and glycerin.	1 in 9 (wt.). 1 in 6½ (vol.).	Externally.
Amyli Glycerin of Starch. Plasma. Glycamyl.	Starch, water and glycerin.	1 in 10 (wt.). 1 in 8½ (vol.).	Excipient, ointment base and poultice.
Boracis Glycerin of Borax	Borax and glycerin.	1 in 7 (wt.). 1 in 6¼ (vol.).	(½ to 1½ fl. dr.)
Pepsini Glycerin of Pepsin.	Pepsin, HCl., water and glycerin.	5 grs. in each fluid drachm.	1 to 2 fl. dr.
Plumbi Subacetatis Glyc. Subacetate of Lead.	Pb.Ac., Pb.O., water and glycerin.	1 in 4 (wt.). 1 in 2½ (vol.).	Externally.
Tragacanthæ Glycerin Tragacanth.	Tragacanth, powdered, water and glycerin.	1 in 5¾ (wt.). 1 in 4½ (vol.).	Excipient.

INFUSA. INFUSIONS. (TEAS). *infundo I pour*

Aqueous solutions of the medicinal principles of plant-drugs, obtained by infusing with boiling water. The following constituents, being soluble in hot water, are usually also present, viz: Starch, sugar, gum and pectin.

GENERAL METHOD OF PREPARATION.—Boiling water is poured upon the coarsely comminuted drug, which has been placed in a previously-warmed, closely-covered vessel. The drug is allowed to remain in contact with the solvent for a specified time, and the resulting solution separated from the marc, by colation and expression.

EXCEPTIONS.—Infusions Calumba and Quassia are prepared by *maceration* with *cold* water, instead of boiling water.

PRESERVATION.—Inasmuch as infusions are made with water and contain no antiseptics, they readily undergo fermentative or putrefactive decomposition, hence should not be kept in stock, but made extemporaneously, as occasion demands.

CAUTION.—This line of preparations should not be made from fluid extracts.

CONCENTRATED INFUSIONS.—Experiment having proven that certain of the official Infusions can be prepared in highly concentrated states, and which, owing to the fact that they contain alcohol, will not undergo deterioration; these have been admitted into the Pharmacopœia as *Liquores Concentrati*, and the products of dilution with nine times their volume of water, may be prescribed by medical practitioners in place of the corresponding Infusions.

Some of these diluted preparations differ only in minor respects from freshly prepared Infusions, mainly, in that they contain a small quantity of ethylic alcohol; while others are totally different, owing to the fact that the drugs are exhausted with alcohol instead of water. Nine of these Concentrated Infusions are official, viz.: *Liquores Concentrati Calumbæ, Chiratæ, Cusparia, Krameriæ, Quassiæ, Rhei, Sennæ, Sennæ Serpentariæ;* they are tabulated elsewhere (*vide Liquores*).

General dose (few exceptions) ½ – 1 3/5
Most uniform strength 1 – 20
range 1 – 4 to

INFUSA.

Twenty-two Official Infusions.

Names and Synonyms.	Ingredients.	Strength.	Duration of Process.	Dose.
Infusum:				
Aurantii Infusion Orange Peel.	Bitter orange peel, cut.	1 in 20	15 minutes.	½ to 1 fl. oz.
Aurantii Compositum Comp. Infusion Orange Peel.	Orange and lemon peels, and bruised cloves.	1 in 40	15 minutes.	½ to 1 fl. oz.
Buchu Infusion Buchu.	Leaves, freshly broken.	1 in 20	15 minutes.	1 to 2 fl. oz.
Calumbæ Infusion Calumba. Infusion Columbo.	Root thinly sliced. cold water	1 in 20	30 minutes.	½ to 1 fl. oz.
Caryophylli Infusion Cloves.	Flower buds, bruised.	1 in 40	15 minutes.	½ to 1 fl. oz.
Cascarillæ Infusion Cascarilla.	Bark, 10 powder.	1 in 20	15 minutes.	½ to 1 fl. oz.
Chiratae Infusion Chiretta.	Plant, cut small.	1 in 20	15 minutes.	½ to 1 fl. oz.
Cinchonæ Acidum Acid Infusion Cinchona.	Red cinchona bark, and aromatic H_2SO_4	1 in 20	1 hour.	½ to 1 fl. oz.
Cuspariæ Infusion Cusparia. Infusion Angustura Bark.	Bark, 20 powder.	1 in 20	15 minutes.	1 to 2 fl. oz.
Digitalis Infusion Foxglove.	Leaves, 20 powd.	1 in 146	15 minutes.	2 to 4 fl. dr.
Ergotæ Infusion Ergot.	Freshly cut ergot.	1 in 20	15 minutes.	1 to 2 fl. oz.

INFUSA—*Continued.*

Names and Synonyms.	Ingredients.	Strength.	Duration of Process.	Dose.
Infusum:				
Gentianæ Compositum Compound Infusion Gentian.	Gentian root, sliced, bitter orange peel, cut, lemon peel, fresh, cut.	1 in 80	15 minutes.	½ to 1 fl. oz.
Krameriæ Infusion Rhatany.	Root, 40 powder.	1 in 20	15 minutes.	1 to 2 fl. oz.
Lupuli Infusion Hop.	Strobiles, freshly broken.	1 in 20	15 minutes.	1 to 2 fl. oz.
Quassiæ Infusion Quassia.	Wood, rasped. cold water	1 in 100	15 minutes.	½ to 1 fl. oz.
Rhei Infusion Rhubarb.	Root, thinly sliced.	1 in 20	15 minutes.	½ to 1 fl. oz.
Rosæ Acidum Acid Infusion Roses.	Red rose petals, dried, and diluted H_2SO_4	1 in 40	15 minutes.	½ to 1 fl. oz.
Scoparii Infusion Broom.	Tops, dried and bruised.	1 in 10	15 minutes.	½ to 1 fl. oz.
Senegæ Infusion Senega. Infusion Seneka.	Root, 20 powder.	1 in 20	30 minutes.	½ to 1 fl. oz.
Sennæ Infusion Senna.	Leaflets, and ginger rhizome, sliced.	1 in 10	15 minutes.	½ to 2 fl. oz.
Serpentariæ Infusion Serpentary. Infusion Virginia Snakeroot.	Rhizome, 10 powder.	1 in 20	15 minutes.	½ to 1 fl. oz.
Uva Ursi Infusion Bearberry.	Leaves, bruised.	1 in 20	15 minutes.	½ to 1 fl. oz.

Illusion Beardelly.				

INJECTIONES HYPODERMICÆ.
HYPODERMIC INJECTIONS.

Perfect solutions of medicinal substances, to be conveyed to the subcutaneous tissue, by means of a hypodermic syringe.

Rapid absorption follows this mode of administration, through the lymphatics and capillary vessels, furnishing the advantage of the full action of the amount of drug used, without any possible changes, from intestinal secretions or processes.

STERILIZATION.—In order to avoid the formation of abscesses or sloughing, both the solution and syringe should be sterile, and the point of the instrument free from rust or other foreign matter. It is not desired that solutions for hypodermic use shall he prepared as "stock solutions," hut that they be freshly prepared, using distilled water that has been sterilized by recent thorough boiling; this is especially necessary with solutions of alkaloids, which soon develop *penicillium*, which often grows at the expense of the alkaloid. Although not officially enjoined, it is a wise precaution to render the appliances aseptic, and therefore the test-tube (or other vessel) in which the solution is to be made, as well as the bottle in which it is to be dispensed, should be rinsed with boiling distilled water, and dried in an oven at about 200°C.

With a view to still further ensure the protection of these solutions, the B.P. instructs the addition of minute quantities of certain antiseptic agents, as salicylic acid and phenol.

INJECTIONES HYPODERMICÆ

Four Official Hypodermic Injections.

NAMES AND SYNONYMS.	INGREDIENTS.	STRENGTH.	SUBCUTANEOUS DOSE.
Injectio Hypodermicæ:			
Apomorphinæ Hypodermic Injection of Apomorphine.	Apomorphine hydrochloride, dilute hydrochloric acid and water.	1 grain in 110 minims.	5 to 10 min.
Ergotæ Hypodermic Inject. Ergot, Hypoderm Inject. Ergotin.	Extract ergot, phenol and water.	33 grains in 110 minims	3 to 10 min.
Morphinæ Hypodermic Injection of Morphine.	Morphine tartrate and water.	5 grains in 110 minims.	2 to 5 min.
Cocainæ Hypodermic Injection of Cocaine.	Cocaine hydrochloride, salicylic acid and water	10 grains in 110 minims.	2 to 5 min.

LINIMENTA. LINIMENTS.

Liquid or semi-liquid preparations, which are intended for external use by applying to the skin with inunction. Oils, soaps, and alcohol represent the vehicles through which medication is effected.

EXCEPTIONS: Linimenta Crotonis et Sinapis, owing to the nature of the chief medicating ingredient, are applied by means of a camel's-hair brush.

DISPENSING.—Inasmuch as the accidental internal administration of many of these preparations is likely to cause unpleasant or grave results, it is a commendable precaution to label them "Liniment. For External Use Only!" or "Poison!" However, when liniments are dispensed on the order of a medical practitioner, the latter warning label should be used *only when so ordered.*

LINIMENTA.

Fifteen Official Liniments.

NAMES AND SYNONYMS.	INGREDIENTS.	STRENGTH.	PROCESS.
I.—EXTRACTS OF ROOTS CONTAINING CAMPHOR IN SOLUTION.—TWO.			
Linimentum:			
Aconiti Liniment Aconite.	Root, 40 powder, camphor and alcohol.	1 in 1½	Maceratinn and Percolation.
Belladonnæ Liniment Belladonnæ.	Liq. ext. belladonna, alcohol, camphor and water.	1 in 2	Solution.
II. CONTAINING CAMPHOR AS A BASIS.—FIVE.			
Camphoræ Liniment Camphor. Camphorated Oil.	Camphor flowers and olive oil.	1 in 5.	Solution.
Camphoræ Ammoniatum Ammoniated Lin. Camphor. Comp. Camphor Liniment.	Camphor, oil lavender, alcohol and strong sol. ammonia.	Liq. am fort., 1 in 4.	Solution.
Saponis Linimeot Soap.	Soft soap, camphor, oil rosemary, alcohol and water.	1 in 10 nearly	Maceration.
Sinapis Linimeot Mustard.	Volatile oil mustard, camphor, castor oil and alcohol.	Oil mustard 1 tn 27.	Solution.
Terebinthinæ Liniment Turpentine	Soft soap, camphor, oil turpeotine and water.	Oil torpentine 1 in 1½	Emulsif.

LINIMENTA—*Continued.*

Names and Synonyms.	Ingredients.	Strength.	Process.
III. Containing Camphor Liniment as a Basis.—Three.			
Linimentum:			
Chloroformi Liniment Chloroform.	Chloroform and camphor liniment.	1 in 2	Solution.
Hydrargyri Liniment Mercury.	Oint. mercury, strong solution ammonia and camphor liniment.	1 in 3, or mercury 16 p.c.	Emulsif.
Terebinthinæ Aceticum Liniment Turpentine and Acetic Acid. "St. John Long's Liniment."	Oil turpentine, camphor liniment and glacial acetic acid.	1 in 2½	Emulsif.
IV. Containing no Camphor.—Four.			
Ammoniæ Liniment Ammonia.	Solution ammonia, olive and almond oils.	1 in 4	Emulsif.
Calcis Liniment Lime. Carron Oil.	Solution lime, olive oil.	1 in 2	Saponif.
Crotonis Liniment Croton Oil.	Oils croton and cajuput, and alcohol.	1 in 8	Solution.
Potas. Iodidi c. Saponis Lin. Potassium Iodide with Soap.	Curd soap, KI., glycerin, oil lemon, water.	1 in 9	Digestion and Trituration.
V. Containing Soap Liniment as a Basis.—One.			
Opii Liniment Opium. Anodyne Liniment.	Tincture opium and soap liniment.	1 in 2	Solution.

3/8 To Morph

Liq Iodine Fortis in Ammon —
3 Iodine

LIQUORES. SOLUTIONS.

Aqueous solutions without sugar, in which the substances acted upon are wholly soluble in water.

EXCEPTIONS.—Absolute alcohol is required as a solvent in the preparation of Solutions Sodium Ethylate and Ethyl Nitrite; Alcohol, 90 per cent., as solvent in preparing Solutions Trioitrin and Coal Tar; to hasten evaporation, in Strong Solution of Iodine; Alcohol, 20 per cent., as a solvent *and antiseptic* io Pancreatic Solution; Acetic Ether as a solvent in Blistering Liquid; Benzol and Carbon Disulphide, as a solvent in making Solution India-Ruhber; Sugar is used in Saccharated Solution of Lime.

USE OF ANTISEPTICS.—Many of the official *Liquors* contain sensitive constituents that are prone to decomposition, unless protected hy the presence of ao efficient antiseptic. In most cases where such protective measures are oecessary, variable proportions of alcohol, 90 p.c., are employed, ~., all the alkaloidal solutions contain 25 p.c. of Alcohol (exceptiog Solution Atropine Sulpbate which contain salicylic acid); Solution of Hamamelis has about 18 p.c.; Diluted Solution of Lead Subacetate has 1¼ p.c.

Glycerin is used in preserving Solutioo Ethyl Nitrite; glycerin with phenol in preserving Thyroid Solution, and Solution Hydrogen Peroxide contains sulphuric acid for the same reason.

REMARKS.—Solutioo Cocaine Hydrochloride is official under the title, *Injectio Cocainæ Hypodermica;* Solution Ham[illegible]lis may be coosidered a medicated water, and therefore more properly classified uoder *Aquæ*.

LIQUORES.

Forty-three Official Solutions, not including Liquores Concentrati.

NAMES AND SYNONYMS.	INGREDIENTS.	SPECIFIC GRAVITY AND STRENGTH.	PROCESS.	DOSE AND REMARKS.
I. SOLUTIONS OF ALKALOIDAL SALTS.—FIVE. STRENGTH: 1 GRAIN IN 110 MINIMS.				
Liquor: Atropinæ Sulphatis. Solution Sulphate Atropine.	Atropine sulphate and salicylic acid.	1 grain in 110 min. (1 gram in 100 c.m³).	Solution.	½ to 1 min.
Morphinæ Acetatis. Solution Acetate of Morphine.	Morphine acet., dil. acet. acid, alcohol and water.	1 grain in 110 min. (1 gram in 100 c.m³).	Solution.	10 to 60 min.

Alk. sol all contain antiseptics & are uniform
Morph. acet- & Dil acid to keep in solution

Antiseptic underlined

Morphinæ Hydrochloridi Sol. Hydrochloride Morphine. Sol. Hydrochlorate Morphine.	Morphine hydrochloride, dil. HCl., alcohol and water.	1 grain in 110 min. (1 gram in 100 c.m³).	Solution.	10 to 60 min.
Morphinæ Tartratis Solution Tartrate Morphine.	Morphine tartrate, alcohol and water.	1 grain in 110 min. (1 gram in 100 c.m³).	Solution.	10 to 60 min.
Strychninæ Hydrochloridi Sol. Hydrochloride Strychnine. Sol. Hydrochlorate Strychnine. Liq. Strychninæ. Hall's Solution Strychnine.	Strychnine hydrochloride, alcohol and water.	1 grain in 110 min. (1 gram in 100 c.m³).	Chemical Solution.	2 to 8 min.

II. Solutions of Iron Salts.—Five.

Ferri Acetatis Solution Ferric Acetate. Solution Acetate of Iron. Sol. Peracetate of Iron.	Solution persulphate iron, solution ammonia, glacial acetic acid and water.	Specific gravity 1·032.	Precipitation and Chemical Solution.	5 to 15 min.
Ferri Perchloridi Solution Ferric Chloride. Solution Perchloride of Iron. Solution Sesquichloride Iron.	Strong solution perchloride iron and water.	1 strong solution in 4. Same as tincture.	Dilution.	5 to 15 min.
Ferri Perchloridi Fortis Strong Sol. Ferric Chloride. Strong Sol. Perchloride Iron Strong Sol. Sesquichloride Iron.	Iron, hydrochloric and nitric acids and water.	Specific gravity, 1·420, 22·5 grains Fe. in 110 minims.	Chemical Solution.	Stock Solution.
Ferri Pernitratis Solution Ferric Nitrate. Solution Pernitrate of Iron.	Iron, nitric acid and water.	Specific gravity, 1·207, 3·3 grains Fe. in 110 minims.	Chemical Solution.	5 to 15 min.
Ferri Persulphatis Solution Ferric Sulphate. Solution Persulphate Iron. Solution Tersulphate Iron.	Sulphate iron, sulphuric and nitric acids and water.	Specific gravity 1·441, 14·4 p.c. Fe_2O_3, or 11·83 grains in 1 fl. dr.	Chemical Solution.	Stock Solution.

III. Arsenical Solutions.—Four.

Arsenicalis Arsenical Solution. Liquor Potassii Arsenitis. Fowler's Solution.	Arsenious anhydride potassium [illegible] tinct. lavender [illegible] water.	Specific gravity 1·010, 1 gr. As_4O_6 in 110 min., or 4 grs. in 1 fl. oz.	Chemical Solution.	2 to 8 min.

LIQUORES—*Continued.*

Names and Synonyms.	Ingredients.	Specific Gravity and Strength.	Process.	Dose and Remarks.
Liquor: **Arsenici Hydrochloricus** — Hydrochloric Solution Arsenic. Solution Arsenious Acid.	Arsenious anhydride, hydrochloric acid and water.	Specific gravity 1·010. 1 gr. As_4O_6 in 110 min., or 4 grs. in 1 fl. oz.	Solution.	2 to 8 min.
Arsenii et Hydrargyri Iodidi — Sol. Arsenious and Mercurous Iodides. Donovan's Solution.	Arsenium iodide, mercuric iodide and water.	Specific gravity 1·016, 1 gr. each of AsI_3 and HgI_2 in 110 min.	Solution.	5 to 20 min.
Sodii Arsenatis — Solution Arsenate Sodium.	Anhydrous arsenate of sodium and water.	1 gr. anhyd. salt, or 1·77 gr. xtal. salt in 110 min.	Solution.	2 to 8 min.
IV. Disinfecting Solutions.—Six.				
Calcis Chlorinatæ — Solution Chlorinated Lime.	Chlorinated lime and water.	Specific gravity 1·055, 1 in 10, 2 to 3 p.c. available Cl	Agitation and Colation.	Externally.
Hydrargyri Perchloridi — Solution Mercuric Chloride. Solution Perchloride Mercury. Solution Bichloride Mercury. Solution Corrosive Sublimate.	Mercuric chloride and water.	1 in 875, or 1 grain in 2 fl. ozs. ~~½ gr. in 1 fl. dr.~~	Solution.	30 to 60 min.
Hydrogenii Peroxidi — Solution Hydrogen Peroxide.	Barium peroxide, diluted sulphuric acid and water.	9 to 11 vols. oxygen. 3 p.c. by weight.	Chemical Solution.	½ to 2 fl. dr.
Potassii Permanganatis — Solution Potass. Permanganate. Weak Condy's Fluid.	Potassium permanganate and water.	1 grain in 110 min. About 4⅓ grs. in 1 fl. oz.	Solution.	2 to 4 fl. dr.
Sodæ Chlorinatæ — Solution Chlorinated Soda.	Chlorinated lime, sodium carbonate and water.	Specific gravity 1·054-2·5 p.c available Cl.	Double Decomposition.	10 to 20 min.
Zinci Chloridi — Solution Chloride Zinc. Burnett's Disinfecting Fluid.	Zinc, hydrochloric acid, solution chlorine, zinc carb., and water.	Specific gravity 1·330, About 57 p.c. $ZnCl_2$. About 366 grs in 1 fl.oz.	Chemical Solution.	Externally.

H_2O_2 Test for acid sol of $KMnO_4$, & 15 to 20 Vols of O.
½ from Ea.

V. Alkaline Solutions, Containing Alkaline Hydroxides or Carbonates.—Six.

Ammoniæ Solution Ammonia.	Strong Solution, 1 vol. Water 2 vols.	Specific gravity 0·959. 10 p.c. NH_3.	Solution.	Externally.
Ammoniæ Fortis Strong Solution Ammonia.	Ammonium chloride, slaked lime and water.	Specific gravity 0·891. 32·5 p.c. NH_3.	Distillation and Solution.	Stock Sol.
Calcis Solution Lime. Lime Water.	Lime and water, forming $Ca(HO)_2$.	1 gr. CaO in 2 fl. ozs., c. 1½ grs. $Ca(HO)_2$.	Chemical Solution	1 to 4 fl. oz.
Calcis Saccharatus Saccharated Solution Lime.	Lime, sugar and water.	Specific gravity 1·055. 8 grs. in 1 fl. oz.	Chemical Solution.	15 to 60 min.
Magnesii Carbonatis Solution Magnesium Carbonate. Fluid Magnesia.	Magnesium sulphate, sodium carbonate, water and CO_2 (3 atm.)	2 p.c (magnes. carb.) 10 grs. in 1 fl. oz.	Solution.	1 to 2 fl. oz.
Potassæ Solution Potash.	Potassium hydroxide and water.	Specific gravity 1·058. 5·85 p.c. KHO. 27 grs. in 1 fl.oz.	Double Decomposition.	10 to 30 min.

VI. Caustic Solutions.—Three.

Acidi Chromici Solution Chromic Acid	Chromic anhydride and water.	25 p.c. CrO_3, or 29·5 p.c. real acid, H_2CrO_4.	Solution.	Externally.
Hydrargyri Nitratis Acidus Acid Solution Mercuric Nitrste. Acid Sol. Pernitrate Mercury.	Mercury, nitric acid and water.	Specific gravity about 2·00. Abont 50 per cent. $Hg(NO_3)_2$.	Chemical Solution.	Externally.
Sodii Ethylatis Solution Ethylate Sodium.	Metallic sodium and absolute alcohol.	Specific gravity 0·867. 18 per cent. C_2H_5ONa.	Chemical Solution.	Externally.

Caustic alcohol

LIQUORES—*Continued.*

Names and Synonyms.	Ingredients.	Specific Gravity and Strength.	Process.	Dose and Remarks.
VII. Solutions of Ammonium Salts.—Three.				
Liquor: **Ammonii Acetatis** Solution Ammonium Acetate. Spirit of Mindererus.	Ammonium carbonate, acetic acid and water.	4 grains ammonium acetate in 1 fl. dr.	Chemical Solution.	2 to 6 fl. drs.
Ammonii Citratis Solution Ammonium Citrate.	Citric acid, ammonium carbonate and water.	6½ grains ammonium citrate in 1 fl. dr.	Chemical Solution.	2 to 6 fl. drs.
Bismuthi et Ammonii Citratis Sol. Bismuth & Ammon. Citrate. Liquor Bismuthi. Solution Bismuth.	$BiONO_3$, potass. citrate, potass. carb., nitric acid, solution ammonia and water.	Specific gravity 1·070. Bismuth cit. 10 p.c. 1 fl. dr. represents 3 grs. Bi_2O_3.	Chemical Solution.	½ to 1 fl. dr.
VIII. Irritant or Blistering Solutions.—Two.				
Epispasticus Blistering Liquid. Linimentum Cantharidis.	Powd. cantharides and acetic ether.	1 in 2.	Percolation.	Externally.
Iodi Fortis Strong Solution of Iodine Lugol's Solution. Iodine Liniment.	Iodine, potassium iodide, alcohol 90 p.c., and water.	11½ p.c. iodine. 7 p.c. potass. iodide.	Solution.	Externally.
IX. Miscellaneous Solutions.—Nine.				
Caoutchouc Solution India-Rubber.	India-rubber, benzol and carbon disulphide.	1 in 20.	Solution.	Externally.
Ethyl Nitritis Solution Ethyl Nitrite. Solution Nitrous Ether.	Ethyl nitrite, absolute alcohol and glycerin.	2·5 to 3 p.c. ethyl nitrite.	Solution.	20 to 60 min.

Ammon Acet must be tested, slight acid or neut.
(Test by heat (not Boil.)
Acetic ether solvent in Blastic hypno

Hamamelidis Solution Hamamelis. Solution Witch Hazel.	Fresh witch hazel leaves, water and alcohol 90 p.c.	1 in 1.	Maceration and distillation.	A medicated water.
Pancreatis Pancreatic Solution.	Powdered pancreas and alcohol 20 p.c.	1 in 4.	Digestion.	
Picis Carbonis Solution Coal Tar. Emulsion Coal Tar.	Prepared coal tar, quillaia bark and alcohol 90 p.c.	1 in 6.	Percolation and digestion.	Externally.
Plumbi Subacetatis Fortis Strong Sol. Lead Subacetate. Goulard's Extract.	Lead acetate, lead oxide and water.	Specific gravity 1·275. 23 p.c. $Ph_2O(C_2H_2O_2)_2$.	Chemical solution.	Stock solution.
Plumbi Subacetatis Dil. Diluted Sol. Lead Subacetate. Lead Water. Aqua Plumbi. Goulard Water. Goulard's Lotion.	Solution lead subacetate, alcohol 90 p.c. and water.	1 strong solotion in 80. in boiling dist. H₂O only	Solution.	Externally.
Thyroidei Thyroid Solution.	Thyroid glands, glycerin, phenol and water.	100 min. represents one thyroid gland.	Maceration.	5 to 15 min.
Trinitrini Solution Trinitrin. Solution Nitroglycerin. Solution Glonoin.	Nitroglycerin and alcohol, 90 p.c.	Specific gravity 0·840. 1 gr. in 110 min.	Solution.	½ to 2 min.

LIQUORES CONCENTRATI. CONCENTRATED SOLUTIONS.

Concentrated solutions of plant-drug constituents, designed to represent so-called concentrated infusions and decoctions, and to be administered directly, or in place of the corresponding official infusions and decoctions, after dilution with water.

With one exception, *Liquor Sarsæ Compositus Concentratus*, they are in reality Concentrated Infusions; the one mentioned is a Concentrated Decoction, which on dilution with seven times its volume of water, furnishes a product similar to the obsolete preparation, *Decoctum Sarsæ Compositum*.

The others are of such strengths, that, when diluted with *nine times their volume* of distilled water, the product may be substituted for the corresponding official Infusion, differing (according to statement of the B.P.) from the freshly prepared infusions only in minor respects, and containing a small quantity of ethyl hydroxide.

Three of the Concentrated Solutions are made with an aqueous menstruum, but after evaporation to a specified volume, alcohol, 90 p.c., is added as a preservative agent; those referred to are *Calumbæ*, *Sarsæ Compositus*, *Sennæ*.

It will be observed that the prevailing range of dosage is one-half to one fluid drachm.

LIQUORES CONCENTRATI.

Ten Official Concentroted Solutions.

Name and Synonyms.	Ingredients.	Strength.	Process and Remarks.	Dose.
Liquor Concentratus : Calumbæ Concentrated Solution Calumba. Concentrated Infusion Calumba	Root—5 powder, water and alcohol 90 p.c.	1 in 2.	Maceration and Evaporation. 22·5 p.c. alcohol added.	½ to 1 fl. dr.

strength 1 – 2 except Duessia

Chiratæ Concentrated Solution Chiretta Concentrated Infusion Chiretta.	Plant—40 powder, and alcohol 20 p.c.	1 in 2.	Percolation.	½ to 1 fl. dr.
Cuspariæ Concentrated Solution Cusparia. Concentrated Solution Angustura. Concentrated Infusion Cusparia.	Bark—40 powder, and alcohol 20 p.c.	1 in 2.	Percolation.	½ to 1 fl. dr.
Krameriæ Conc. Solution Krameria. Concentrated Solution Rhatany. Concentrated Infusion Krameria.	Root—40 powder, and alcohol 20 p.c.	1 in 2.	Percolation.	½ to 1 fl. dr.
Quassiæ Concentrated Solution Quassia. Concentrated Infusion Quassia.	Wood—40 powder, and alcohol 20 p.c.	1 in 10.	Percolation.	½ to 1 fl. dr.
Rhei Concentrated Solution Rhubarb. Concentrated Infusion Rhubarb.	Root—5 powder, and alcohol 20 p.c.	1 in 2.	Percolation.	½ to 1 fl. dr.
Sarsæ Compositus Conc. Comp. Sol. Sarsaparilla. Conc. Comp. Decoct. Sarsaparilla.	Sarsaparilla, sassafras, gualacum, liquorice, mezereon, water and alcohol 90 p.c.	Sarsaparilla: 1 in 1.	Infusion and Evaporation. 22.5 p.c. alcohol added.	2 to 8 fl. dr.
Senegæ Concentrated Solution Senega. Concentrated Infusion Senega.	Root—20 powder, alcohol 20 p.c. and 45 p.c.	1 in 2.	Percolation.	½ to 1 fl. dr.
Sennæ Concentrated Solution Senna. Concentrated Infusion Senna.	Leaves—5 powder, tinct. ginger, water and alcohol 90 p.c.	1 in 1.	Re-percolation. 10 p.c. alcohol added.	½ to 1 fl. dr.
Serpentariæ Conc. Solution Serpentary. Conc. Infusion Serpentary.	Rhizome—40 powder, and alcohol 20 p.c.	1 in 2.	Percolation.	½ to 2 fl. dr.

LOTIONES. LOTIONS. (Washes).

Aqueous liquid preparations, for external application as washes, or by soaking lint or muslin with them and applying to the affected part.

Used not simply for the purpose of influencing external surfaces, but deep-lying tissues as well.

Two Official Lotions.

X Lotio Hydrargyri Flava. Yellow Mercurial Lotion. Yellow Wash. Yellow Phagedænica Water. INGREDIENTS.—Mercuric chloride and solution of lime. STRENGTH.—1 in 219, or 2 grains in one fluid ounce. PRODUCT.—Yellow mercuric oxide deposited in a solution of calcium chloride.

X Lotio Hydrargyri Nigra. Black Mercurial Lotion. Black Wash. Black Phagedænica Water. INGREDIENTS.—Mercurous chloride, glycerin, mucilage of tragacanth and solution of lime. STRENGTH.—1 in 146, or 3 grains in one fluid ounce. PRODUCT.—Black mercurous oxide suspended in a solution of calcium chloride by means of glycerin and mucilage of tragacanth.

MELLITA. HONEYS.

Simple honeys or solutions of medicinal substances in honey.

Two Official Honeys.

Mel Depuratum. Clarified Honey. Strained Honey. Mel Despumatum. Honey melted on a water bath and strained while hot through flannel. Contains about 80 per cent. sugar.

Mel Boracis. Borax Honey. Contains borax, glycerin and clarified honey. Strength: Borax 1 in 9½.

MISTURÆ. MIXTURES.

Mostly preparations of solid or liquid substances suspended in aqueous liquids by the aid of viscid agents.

This class represents compounds which cannot be included in any other distinct and characteristic pharmaceutical group:—Six are emulsions of oils (Misturæ Amygdalæ, Ricini, Spt. Vini Gallici), or of resins (Mist. Ammoniaci, Ferri Comp., Guaiaci), in which the oily or resinous substances are emulsified by means of an inherent emulsifacient (Mist. Ammoniaci, Ferri Comp., Spt. Vini Gallici), or an added emulsifacient (Misturæ Amygdalæ, Guaiaci, Ricini).

One is an aqueous suspension of an insoluble powder, by means of the viscosity resulting from the addition of tragacanth (Mist. Cretæ), while Mist. Ferri Comp. is both an emulsion of resin (myrrh) and an aqueous suspension of insoluble ferrous carbonate (resulting from a mutual interaction of ferrous sulphate and potassium carbonate, both in solution) in the viscid emulsion, aided by the presence of sugar.

Brown Mixt.

Pulv Ext Sce	30 gm
Sir:	60 cc
mucilago	100 cc
Sr Camph Co	120 cc
Vin Antim	60 cc
Sp n. Et	30 cc
H_2O ad	100 cc
Dose Tsp.	

Creta is incompat with acid Mixture kept out-

To suspend mixtures containing insoluble salts or Po plant drugs in most cases should be suspended in Mag. if a light-Pt ($MgCO_3$. MgO. $Ca_3(PO_4)_2$ Po Carbonis Po Rhei. Charcoal &) the add of a little Glycerine or Syrup. increase viscosity of Mag & temporary suspends insol subst- If Po. is heavy ($BiONO_3$. $Bi_2O_2CO_3$ Hg_2Cl_2 $CaCO_3$.) the viscosity & media should be increased by add of mucil or Po Gum.

Thyme. is best with Bismuth Salt- Honey is also good.

Two are simple mixtures of compatible substances, Misturæ Creosoti, et Sennæ Comp.

UNOFFICIAL MIXTURES.—The title *Mistura* also applies to a number of officinal compounds, that are not recognized in the B.P., but which are frequently dispensed; *e.g.* Mist. Glycyrrhizæ Comp. (Brown Mixture), Rhei et Sodæ, Ferri et Ammonii Acetatis (Basham's Mixture), etc.

Extemporaneously prepared liquid preparations made according to the order of the medical practitioner, when intended for internal use, are quite commonly termed "Mixtures," especially if intended for repeated administration. When to be taken at a single dose of one to four fluid ounces, the preparation is often termed "The Draught" (*Haustus*), or "The Potion" (*Potio*), while mixtures to be taken in doses of drops, are known as "The Drops" (*Guttæ*).

CAUTION.—Nearly all of the official mixtures, from the very nature of their composition, are not permanent preparations, and hence should not be kept in stock in large quantities, but should be prepared either in small amounts, or only when wanted for use.

MISTURÆ.

Nine Official Mixtures.

NAMES AND SYNONYMS.	INGREDIENTS AND REMARKS.	STRENGTH.	DOSE.
Mistura:			
Ammoniaci Ammoniacum Mixture.	Ammoniacum, syr. tolu and water. Emulsion.	1 in 33.	½ to 1 fl. oz.
Amygdalæ Almond Mixture.	Comp. almond powder and water. Emulsion.	1 in 9.	½ to 1 fl. oz.
Creosoti Creosote Mixture.	Creosote, spirit juniper, syrup and water.	About 1 min. in 1 fl. oz., or 1 in 480.	½ to 1 fl. oz.
Cretæ Chalk Mixture.	Ppd. chalk, powd. tragacanth, sugar and cinnamon water.	1 chalk in 32. 13 grs. in 1 fl. oz.	½ to 1 fl. oz.
Ferri Composita Comp. Mixture of Iron. Griffith's Mixture.	Iron sulphate, potass. carb., myrrh, rose water spt. nutmeg and sugar. Emulsion.	2·5 grs. sulph. iron, or 2 grs. carb. iron in each fl. oz.	½ to 1 fl. oz.
Guaiaci Guaiacum Mixture.	Resin guaiac, sugar, powd. tragacanth, cinnamon water. Emulsion.	1 in 42. 11 grs. in 1 fl. oz.	½ to 1 fl. oz.
Olei Ricini Castor Oil Mixture.	Castor oil, mucilage acacia, cinnamon and orange flower waters. Emulsion.	3 fl. drs. in 1 fl. oz.	1 to 2 fl. oz. as a draught.
Sennæ Composita Comp. Mixture of Senna. Black Draught.	$MgSO_4$, liq. ext. liquorice, aromat. spirit ammon., tinct. cardam. co. and infusion senna.	1 oz. $MgSO_4$, 2·25 dr. senna in 4 fl. ozs.	1 to 2 fl. oz. as a draught.
Spiritus Vini Gallici Mixture French Brandy.	French brandy, cinnam. water, vitellum ovi, sugar	1 in 2½.	1 to 2 fl. oz.

MUCILAGINES. MUCILAGES.

Viscid, adhesive, tenacious solutions, or opaque semi-solid jellies, obtained by macerating or digesting gums, or substances containing such constituents, with water.

Used chiefly as vehicles, emulsifacients and excipients, also for the purpose of affixing labels to bottles or other containers.

These preparations are comparatively short-lived, and hence should be made only in small quantities; they gradually acquire an acid reaction, an offensive odor, and become thinner in consistence.

When not required for medicinal uses, mucilages may be preserved, or the changes just mentioned retarded, by the addition of creosote, glycerin, alum, or the oils of clove, sassafras or thyme.

Two Official Mucilages.

Mucilago Acaciæ. Mucilage. Mucilage Gum Acacia. Dissolve gum acacia in water with agitation. Best accomplished by using coarsely powdered gum and solving by circulatory displacement. Strength: about 1 in 2½

Mucilago Tragacanthæ. Mucilage Tragacanth. Powdered tragacanth, alcohol and water. Solution by intervention. Strength: 1 in 80.

OLEA PINGUIA. FIXED OILS.

Solid or liquid inflammable substances, which are unctuous to the touch, and leave a permanent greasy stain on bibulous paper, which is unaffected by heat. If liquid at ordinary temperatures, they constitute the *fixed oils proper*, and if solid they are termed *fats*.

SOLVENTS.—They are all insoluble in water, and sparingly soluble in cold alcohol (excepting Croton and Castor Oils, which are quite soluble in alcohol), but readily dissolved by ether, chloroform, carbon disulphide, benzol, benzine, and volatile oils.

COMPOSITION.—Mixtures of two or more fatty principles, having different fusing and congealing points, and which may be separated from each other by fractional refrigeration. These fatty principles are the esters of the higher members of the fatty acids, the triatomic alcohol being *glycerin*, and the basylous radicle *glyceryl* or *propenyl*. In most cases they are composed of at least three proximate principles; Olein, $C_3H_5(C_{18}H_{33}O_2)_3$, Palmitin, $C_3H_5(C_{16}H_{31}O_2)_3$, and Stearin, $C_3H_5(C_{18}H_{35}O_2)_3$, which are respectively, *oleate*, *palmitate* and *stearate of glyceryl*. Olein is a liquid, while palmitin and stearin are solids.

PREPARATION.—The fats are obtained from the sources yielding them; by expression, either hot (Butter of Cacao) or cold (Olive Oil), or by boiling with water, the oil separating and rising as a superimposed layer, or by fusion (Lard, Suet), or by extraction with a suitable volatile solvent, and the subsequent removal of the solvent by evaporation or distillation.

SAPONIFICATION.—When treated with hot alkalis, or heated with metallic oxides in the presence of water, or acted upon by superheated steam, the fats are saponified, the products being metallic salts of the fatty acids. The alkalies furnish soluble soaps, while the alkali-earths and metallic oxides yield insoluble soaps (Lead Plaster, Iron Plaster, etc.). Soda soaps are hard (Castile Soap), while Potash soaps are soft (Green Soap).

PRESERVATION.—On exposure to air, the fats decompose slowly and acquire an acrid, disagreeable odor and taste, and an acid reaction; they are then said to be *rancid*, and are unfit for internal administration or outward application. To avoid, or at least to retard these changes, they should be kept in a cool, dry place, protected from light, and in air-tight receptacles.

OLEA PINGUIA.

Seventeen Official Fixed Oils and Fats (including two Medicated Oils.)

NAMES AND SYNONYMS.	SOURCES. INGREDIENTS.	PROCESS. SPEC. GRAVITY.	DOSE. REMARKS.
TRUE FIXED OILS. LIQUID AT ORDINARY TEMPERATURES.			
Oleum:			
Amygdalæ Almond Oil. Expressed Oil Almond.	Bitter or Sweet Almond. (*Prunus Amygdalus var. amara vel dulcis*).	Expression. 0·915 to 0·920.	*Ad libitum.*
Crotonis Croton Oil. Oleum Tiglii.	Croton Seeds (*Croton Tiglium*).	Expression. 0·940 to 0·960.	½ to 1 min.
Lini Linseed Oil. Flaxseed Oil.	Linseed (*Linum usitatissimum*).	Cold Express. 0·930 to 0·940.	
Morrhuæ Cod Liver Oil. Oleum Jecoris Aselli.	Fresh Liver of Cod (*Gadus morrhua*).	Hot Extraction Refrigeration and Express 0·920 to 0·930.	1 to 4 fl. dr.
Olivæ Olive Oil. Sweet Oil.	Ripe Olive Fruit (*Olea europea*).	Expression 0·914 to 0·919.	*Ad libitum.*
Phosphoratum Phosphorated Oil.	Phosphorus dissolved in olive oil. 1 in 100.	Digestion.	1 to 5 min.
Ricini Castor Oil.	Castor seed (*Ricinus communis*)	Expression 0·950 to 0·970.	1 to 8 fl. dr.

OLEA PINGUIA—*Continued.*

Names and Synonyms.	Sources. Inorzhients.	Process. Spec. Gravity.	Dose. Remarks.
Also :			
Linimentum Camphoræ Camphor Liniment. Camphorated Oil.	Campbor dissolved in Olivo Oil, 1 in 5.	Solution.	Externally.
Paraffinum Liquidum Liquid Paraffin. Paraffin Oil. Petroleum Oil.	Petroleum.	Frac. Distill. 0·885 to 0.890. Boiling point, 680° F. (360°C.)	Non-saponifiable.
Solid Fixed Oils or Fats.			
Adeps Lard. Axungia Porcina. Purified lard.	Abdominal fat of Hog, (*Sus scrofa*).	Fusion and Expression. Melts: 100°P. (37·8°C.)	Ointment base.
Adeps Benzoatus Benzoated lard.	Powdered Benzoin (15). Lard (500).	Digestion and Colation.	Ointment Base.
Adeps Induratus Indurated lard Hardened lard.	Purified Lard.	Expression of a portion of its Olein.	Tropical Oint. Base.
Adeps Lanæ Hydrosus Hydrous Wool-fat.	Wool-Fat (7), Water (3).	Trituration.	Ointment Base.
Cetaceum Spermaceti.	Head of Sperm Whale (*Physeter macrocephalus*).	Filt., Pressure, Purification. Melts: 115°–122°P.	Ointments.
Oleum Theobromatis Oil of Theobroma. Cacao Butter.	Cacao Seed (*Theobroma Cacao*).	Hot Express. Melts: 88° to 93° F. (31·1° to 33·9°C.)	Oint. and suppository base.
Paraffinum Durum Hard Paraffin. Paraffin Wax.	Mix. of hard hydrocarbons of paraffin series. Obtained from shale.	Distil., refrig. & purification. 0.820 to 0.940.	Non-saponifiable. Ointments. Melts: 130°–135°P
Paraffinum Molle Soft Paraffin. Petrolatum. Petroleum Jelly.	Mix. of soft hydrocarbons of paraffin series. Obtained from petroleum.	Purification. Sp. Gr. 0·840 to 0·870.	Non-saponifiable. Ointments. Melts: 96°–102°P

OLEA VOLATILIA. VOLATILE OILS. (Essential Oils.)

Volatile, odorous, liquid proximate principles, found naturally in portions of plants, or formed by the action of peculiar ferments upon certain plant constituents. They represent by-products of the elaboration of the food material of the plant.

Properties.—Slightly soluble in water, freely soluble in alcohol, ether, chloroform, carbon disulphide, benzol, fixed oils, etc.; when dropped upon paper they leave a translucent stain, which disappears on heating.

Preparation.—Obtained by simple distillation of oleo-resins (Oil Copaiba, etc.); distillation of the plant-substances with water (Oil Peppermint, etc.); expression (Oil Lemon, etc.); or by extraction with a suitable liquid solvent or a bland fat, and subsequent separation.

Composition.—They are mainly Terpenes, simple hydrocarbons (Oil Turpentine); some are oxygenated (Ol. Cinnamomi); some are sulphurated, containing sulphur (Ol. Sinapis); some are nitrogenated, containing nitrogen (Ol. Amygdalæ Amar.).

The Oxygenated Volatile Oils contain at least two proximate principles, differing in boiling and congealing points, chemical composition, etc. 1. Terpenes, (mostly $C_{10}H_{14}$ or $C_{10}H_{16}$), liquid at ordinary temperatures, and have low boiling points. 2. Stearoptenes, or camphors, as they are often termed, are oxides or hydroxides of terpenes; they are crystalline solids at temperatures slightly below the ordinary, have higher boiling points, and are held in solution in the terpenes at ordinary temperatures; they are esters, alcohols, aldehydes, ketones, alkyl salts, or phenol derivatives.

Preservation.—Being readily affected by the action of air, heat and light, in many cases becoming resinified, in others developing a terebinthinate odor and taste, and a viscid consistence, they should be kept in a cool place, in well-stoppered, amber-glass bottles. Deterioration may often be prevented, or at least considerably retarded, by the addition of about 5 p.c. of commercial alcohol.

OLEA VOLATILIA.

Twenty-four Official Volatile Oils. General 1–3 mv.

Names and Synonyms.	Source.	Process. Spec. Gravity.	Dose.
Oleum:			
Anethi Oil of Dill.	Dill fruit (*Peucedanum graveolens*).	Distillation. 0·905 to 0·920.	½ to 3 min.
Anisi Oil of Anise.	Anise fruit (*Pimpinella Anisum*), or star-anise fruit (*Illicium verum*).	Distillation. 0·975 to 0·990 (68° F.).	½ to 3 min.

OLEA VOLATILIA—*Continued.*

Names and Synonyms.	Source.	Process. Spec. Gravity.	Dose.
Oleum:			
Anthemidis Oil of Chamomile.	Chamomile flowers (*Anthemis nobilis*).	Distillation. 0·905 to 0·915.	½ to 3 min.
Cadinum Oil of Cade. Juniper Tar Oil.	Wood of *Juniperus Oxycedrus*.	Destruct. distil. About 0·990.	Externally.
Cajuputi Oil of Cajuput.	Cajuput leaves (*Melaleuca Leucadendron*).	Distillation. 0·922 to 0·930.	½ to 3 min.
Carui Oil of Caraway.	Caraway fruit (*Carum Carvi*).	Distillation. 0·910 to 0·920.	½ to 3 min.
Caryophylli Oil of Cloves.	Cloves (*Eugenia caryophyllata*).	Distillation. Not below 1·050.	½ to 3 min.
Cinnamomi Oil of Cinnamon.	Cinnamon Bark (*Cinnamomum zeylanicum*).	Distillation. 1·025 to 1.035.	½ to 3 min.
Copaibæ Oil of Copaiba.	Oleo-resin Copaiba (*Copaifera Langsdorfii.*)	Distillation. 0·900 to 0·910.	5 to 20 min.
Coriandri Oil of Coriander.	Coriander fruit (*Coriandrum sativum*).	Distillation. 0·870 to 0·885.	½ to 3 min.
Cubebæ Oil of Cubeb.	Cubeb fruit (*Piper Cubeba*).	Distillation. 0·910 to 0·930.	5 to 20 min.
Eucalypti Oil of Ecalyptus.	Eucalyptus leaves (*Eucalyptus Globulus*), and other species.	Distillation. 0·910 to 0·930.	½ to 3 min.
Juniperi Oil of Juniper.	Juniper fruit (*Juniperus communis*).	Distillation. 0·865 to 0·890.	½ to 3 min.
Lavandulæ Oil of Lavender.	Lavender flowers (*Lavendula vera*).	Distillation. Not below 0·885.	½ to 3 min.
Limonis Oil of Lemon.	Lemon peel (*Citrus medica*).	Mechanically. 0·857 to 0·860.	½ to 3 min.
Menthæ Piperitæ Oil of Peppermint.	Peppermint herb (*Mentha Piperita*).	Distillation. 0·900 to 0·920.	½ to 3 min.
Menthæ Viridis Oil of Spearmint.	Spearmint herb (*Mentha Viridis*).	Distillation. 0·920 to 0·940.	½ to 3 min.
Myristicæ Oil of Nutmeg.	Nutmeg seed (*Myristica fragrans*).	Distillation. 0·870 to 0·910.	½ to 3 min.
Pimentæ Oil of Pimento. Oil of Allspice.	Pimento fruit (*Pimenta officinalis*).	Distillation. Not below 1·040.	½ to 3 min.
Pini Oil of Pine.	Pine leaves (*Pinus Pumilio*).	Distillation. 0·865 to 0·870.	

OLEA VOLATILIA—*Continued.*

Names and Synonyms.	Source.	Process. Spec. Gravity	Dose.
Oleum:			
Rosæ Oil of Rose. Otto of Rose.	Rose flowers (*Rosa damascena*).	Distillation. 0·856 to 0·860 (86°F.)	Flavor.
Rosmarini Oil of Rosemary. Oleum Anthos.	Rosemary herb (*Rosmarinus officinalis*).	Distillation. 0·900 to 0·915.	½ to 3 min.
Santali Oil of Sandal Wood. Oil of Santal Wood.	White Sandal Wood (*Santalum album*).	Distillation. 0·975 to 0·980.	5 to 30 min.
Sinapis Volatile Volatile Oil Mustard.	Black Mustard Seed (*Brassica nigra*).	Mac. with water and distillation 1·018 to 1·030.	Externally.
Terebinthinæ Oil of Turpentine. Spirit of Turpentine.	Oleo-resin Turpentine (*Pinus sylvestris*), and other species.	Distillation.	2 to 10 min. 3 to 4 fl. dr. as Anthelmintic.
Three Official Stearoptenes (Concrete Volatile Oils).			
Camphora Camphor.	Wood of *Cinnamomum Camphora.*	Digestion and sublimation. Sp. Gr. 0·995.	2 to 5 gr.
Menthol Menthol.	Volatile Oils (*Mentha arvensis*) or (*Mentha piperita*).	Refrigeration. Melting point. 107.6°F.	½ to 2 gr.
Thymol Thymol.	Vol. Oils (*Thymus vulgaris*), (*Monarda punctata*), (*Carum copticum*).	Chemical Means.	½ to 2 gr.

OLEO-RESINÆ. OLEO-RESINS. (Derived Oleo-Resins).

Liquid preparations consisting of oils, either fixed or volatile, holding resins and other constituents in solution.

Preparation.—Exhaustion of coarsely-powdered drugs containing oleo-resins, by percolation with ether, and subsequently evaporating or distilling the solvent from the percolate; the oily residue remaining, constitutes the oleo-resin.

One Official Oleo-Resin, (which the B. P. improperly classifies with the Liquid Extracts.)

Extractum Filices Liquidum. Liquid Extract Male Fern. Oleo-Resin Male Fern. 4 to 5½ times strength of drug. Yield 18 to 25 per cent. Dose: 45 to 90 minims.

OXYMELLITA. OXYMELS. (Sour-Honeys).

Medicated honeys, containing acetic acid.

Two Official Oxymel, including Simple Oxymel.

Oxymel. Mel Acetatum. Clarified honey, acetic acid and water. Strength: 1 acetic acid in 10. Specific gravity: 1·320. Dose: 1 to 2 fl. dr.

Oxymel Scillæ. Oxymel Squill. Squill, acetic acid, clarified honey and water. Process: digestion. Strength: 1 squill in 15. Specific gravity: 1.320. Dose: ½ to 1 fluid drachm.

SPIRITUS. SPIRITS.

Alcoholic solutions of volatile substances either solid, liquid or gaseous.

Methods of Preparation.—Simple solution, simple and fractional distillation, chemical decomposition with distillation, distillation and solution, fermentation and distillation.

Dosage.—Under preparations having a double range of dosage, the minimum range represents the dose for repeated administration, and the maximum, the quantity intended for a single administration.

SPIRITUS.

Seventeen Official Spirits, including the unmedicated spirits.

Names and Synonyms.	Ingredients.	Specific Gravity and Strength.	Dose.
I. Spirits made by Simple Solution in Rectified Spirit.—Ten.			
Spiritus:			
Ætheris Spirit Ether.	Ether and alcohol.	0.806 to 0.811. 1 in 3.	20 to 40 min. 60 to 90 min.
Camphoræ Spirit Camphor. Tincture Camphor.	Camphor and alcohol.	Sp. gr. 0·850. 1 in 10.	5 to 20 min.
Chloroformi Spirit Chloroform. Chloric Ether. Spirit Chloric Ether.	Chloroform and alcohol.	Sp. gr. 0·871. 1 in 20.	5 to 20 min. 30 to 40 min.
Cajuputi Spirit Cajuput.	Oil Cajuput and alc.	1 in 10.	5 to 20 min.
Cinnamomi Spirit Cinnamon.	Oil Cinnamon and alc.	1 in 10.	5 to 20 min.
Juniperi Spirit Juniper.	Oil Juniper, powdered talc and alcohol.	1 in 20.	20 to 60 min.
Lavandulæ Spirit Lavender.	Oil Lavender and alc.	1 in 10.	5 to 20 min.

Juniper oil varies in solubility.

SPIRITUS—*Continued.*

Names and Synonyms.	Ingredients.	Specific Gravity and Strength.	Dose.
Spiritus:			
Menthæ Piperitæ Spirit Peppermint.	Oil Peppermint and alc.	1 in 10.	5 to 20 min.
Myristicæ Spirit Nutmeg.	Volatile oil nutmeg, potalc and alcohol.	1 in 10.	5 to 20 min.
Rosmarini Spirit Rosemary.	Oil Rosemary and alc.	1 in 10.	
II. Spirits Involving Distillation. The Distilled Spirits.—Seven.			
Ætheris Compositus Compound Spirit Ether. Hoffmann's Anodyne.	H_2SO_4, alcohol, $NaHCO_3$, ether and water.	0·808 to 0.812 Heavy oil of wine, about 1 in 60.	20 to 40 min. 60 to 90 min.
Ætheris Nitrosi Spirit Nitrous Ether. Spirit Nitric Ether. Sweet Spirit Nitre.	HNO_3, H_2SO_4, alcohol, and copper.	Sp. gr, 0·838 to 0·842. 1·75 to 2·5 p.c. by weight of ethyl nitrite.	20 to 40 min. 60 to 90 min.
Ammoniæ Aromaticus Aromatic Spirit Ammonia. Comp. Spirit Ammonia. Spirit of Sal Volatile.	Strong sol. ammon., ammon. carbonate, oils of lemon and nutmeg, alcohol and water.	Sp. gr. 0·888 to 0·893. 1 fl. dr. contains abt. 1½ grs. carb. and 3 min. strong sol. ammon.	20 to 40 min. 60 to 90 min.
Ammoniæ Fetidus Fetid Spirit Ammonia.	Asafetida, alcohol and strong sol. ammon.	Sp. gr. 0·847, strong sol. am. 1 in 10.	20 to 40 min. 60 to 90 min.
Armoraciæ Compositus Comp. Spirit Horseradish.	Horseradish root, alc., bitter orange peel, nutmeg, water.	Sp. gr. 0·920, 1 horseradish in 8.	1 to 2 fl. dr.
Rectificatus Rectified Spirit. Ninety Per Cent. Alcohol.	Fermented saccharine fluids.	Sp. gr. 0·834, 85·65 p.c. abs. alc. by weight, 90 p.c. abs. alc. by volume.	
Vini Gallici French Brandy. Eau de Vie.	French wine.	Sp. gr. ·920-·940. Not less than 36·5 p.c. (wt.), or 43·5 p.c. (vol.) abs. alcohol.	

ALCOHOL ETHYLICUM. ETHYL ALCOHOL.

The various mixtures of Ethyl Hydroxide, C_2H_5OH, with water, used in pharmaceutical practice as solvents, are customarily designated by the term "spirit," combined with either a qualifying word which directly indicates its strength, or a phrase accepted generally as re ing to an established strength, while in many cases, the proportional p. s of alcohol and water represented in the mixture are stated, *e.g.*, "rec. fied spirit," "proof spirit," "pure spirit," "standard spirit," "commercial spirit," "forty-five per cent. spirit," "spirit two, water one," etc.

It is for this reason that the official dilutions of ethyl hydroxide are referred to here, under the heading Spiritus. The title, Proof Spirit, having been deleted from the B. P., it is to be regretted that the name Rectified Spirit was not also discarded, in order that dilutions of Ethyl Hydroxide might be designated as *Alcohol* of a specified strength, even as the term is now officially employed in characterizing the dilutions of Rectified Spirit.

Ethylic Alcohol is officially recognized of the following strengths:

ALCOHOL ABSOLUTUM.—Absolute Alcohol. Pure Alcohol. Obtained by the removal of water from less strong Ethylic Alcohol, and subsequent distillation. Specific gravity: 0·794 to 0.7969. Strength: not less than 99 p.c. (weight) or 99·4 p.c. (vol.) of Ethyl Hydroxide.

SPIRITUS RECTIFICATUS.—Rectified Spirit. Alcohol, 90 p.c. Obtained by the distillation of fermented saccharine liquids. Specific gravity: 0·8340. Strength: 85·65 p.c. (weight) or 90 p.c. (vol.) of Ethyl Hydroxide. About 57·76 O.P. May be prepared from Commercial Alcohol, 65 O.P., by diluting 19⅛ fl. ozs. with sufficient distilled water, to make when cooled, 20 fl. ozs. or 153⅛ fl. ozs. to make one gallon.

Unofficial. COMMERCIAL ALCOHOL.—The Alcohol made use of in the trade, in the Dominion of Canada, known as "65 Over Proof," and commonly—though incorrectly—termed "Ninety-five Per Cent. Spirit." Specific gravity: 0·820 (actual 0·8199). Contains 91 p.c., by weight, of Ethyl Hydroxide, or 94 p.c. by volume.

ALCOHOL DILUTUM.—Under this general title, Diluted Alcohol, the four dilutions of 90 p.c. alcohol mentioned below are official:

ALCOHOL 70 P.C.—Specific gravity: 0·890. Strength: 66·33 p.c. (weight) or 70 p.c. (vol.) of Ethyl Hydroxide. 22·77 O.P. Prepared from Commercial Alcohol (65 O.P.), by mixing 14⅞ fl. ozs. with enough water to make one pint, or 119⅛ fl. ozs. with water to make one gallon.

ALCOHOL 60 P.C.—Specific gravity: 0·9135. Strength: 52 p.c. (weight) or 60 p.c. (vol.) of Ethyl Hydroxide. 5 O.P. Prepared from Commercial Alcohol (65 O.P.), by diluting 12·75 fl. ozs. with water to make one pint.

ALCOHOL 45 P.C.—Specific gravity: 0·9436. Strength: 37·89 p.c. (weight) or 45 p.c. (vol.) of Ethyl Hydroxide. 21 U.P. Prepared from Commercial Alcohol (65 O.P.), by diluting 9·5 fl. ozs. with water to make one pint, or 76·5 fl. ozs. with water to make one gallon.

ALCOHOL, 20 P.C.—Specific gravity: 0·9760. Strength: 16·5 p.c. (weight) or 20 p.c. (vol.) of Ethyl Hydroxide. 65 U.P. Prepared from Commercial Alcohol (65 O.P.) by diluting 4·25 fl. ozs. with water to make one pint, or 34 fl. ozs. with water to make one gallon.

Unofficial. SPIRITUS TENUIOR. Proof Spirit. Specific gravity 0.922. Strength, 49.5 p.c. (weight) or 57 p.c. (vol.) of Ethyl Hydroxide. Owes its name to the fact that it is the excise unit, according to which duty is assessed by the Government. It may be prepared from Commercial Alcohol (65 O.P.), by diluting 12½ fl. ozs. with water to make one pint, or 97 fl. ozs. with water to make one gallon.

NOTE.—The following table shows the quantity of Commercial Alcohol, known as 65 O.P., and containing 91 p.c. of Ethyl Hydroxide, by weight, or 94 p.c., by volume, required to prepare Diluted Alcohol of the several strengths mentioned. The words pints, gallons, cubic centimeters or liters can, if desired, be substituted for "fluid ounces," in each column.

ALCOHOL DILUTION TABLE.

Quantity of Diluted Alcohol desired.	Strength of Diluted Alcohol Desired.						Use of Pure Water enough to make when cooled
	90 p.c. (vol.)	70 p.c. (vol.)	60 p.c. (vol.)	45 p.c. (vol.)	20 p.c. (vol.)	Proof Spirit. Excise Standard.	
	Use of 94 P.c. 65 O.P. Alcohol.	Use of 94 P.c. 65 O.P. Alcohol.	Use of 94 P.c. 65 O.P. Alcohol.	Use of 94 P.c. 65 O.P. Alcohol.	Use of 94 P.c. 65 O.P. Alcohol.	Use of 94 P.c. 65 O.P. Alcohol.	
fl. ozs.	fl. ozs.	fl. ozs.	fl. ozs.	fl. ozs.	fl. ozs.	fl. ozs.	fl. ozs.
5	4 6-8	3 6-8	3 1-8	2 7-16	1 1-16	3	5
10	4-8	7 4-8	6 3-8	5 6-8	2 1-8	6 1-16	10
15	14 3-8	11 1-8	9 4-8	7 2-8	3 3-16	9 3-32	15
20	19 1 8	14 7-8	12 6-8	9 4-8	4 2-8	12 1-8	20
25	24	18 5-8	16	12	5 5-16	15 1-8	25
30	28 6-8	22 3-8	19 1-8	14 3-8	6 3-8	18 1-8	30
35	33 4-8	26	22 3-8	16 7-8	7 7-16	21 2-8	35
40	38 2-8	29 6-8	25 4-8	19 1-8	8 4-8	24 2-8	40
45	43	33 1-8	28 6-8	21 6-8	9 9-16	27 2-8	45
50	47 7-8	37 4-8	32	24	10 5-8	30 2-8	50
60	57 4-8	44 5-8	38 2-8	28 6-8	12 6-8	36 3-8	60
70	67	52 1-8	44 5-8	33 4-8	14 7-8	42 4-8	70
75	71 7-8	55 7-8	47 7-8	36 2-8	16	45 4-8	75
80	76 4-8	59 5-8	51	38 2-8	17	48 4-8	80
90	86	67	57 4-8	43	19 3	54 4-8	90
100	95 6-8	74 4-8	63 7-8	47 7-8	21 2-8	60 5-8	100
160	153 1-8	119 1-8	102 1-8	76 4-8	34	97	160

EXAMPLE.—If 40 fl. ozs. of 70 p.c. Alcohol are required, find the figure 40 in the first column and on the same line, in the column bearing the

SPIRITUS—*Continued.*

heading, 70 p.c., find 29 6-8, which indicates that 29·6-8 fl. ozs. of Commercial Alcohol (65 O.P.), are required, to which enough water is added to make the mixture measure, when agitated and cooled, 40 fl. ozs.

RULE FOR DILUTING ALCOHOL OF KNOWN STRENGTH TO PRODUCE A LESS STRONG ALCOHOL OF DESIRED STRENGTH.—*Multiply the required quantity by the required percentage strength, and divide by the higher percentage: the quotient will be the quantity to which the liquid must be diluted by the addition of water.* As Alcohol is frequently reduced in volume percentage, and as evolution of heat and contraction of volume invariably follow the dilution of alcohol with water, it therefore becomes necessary, after the liquid has become cooled to 60°F., and contraction has ceased, to add enough water to restore to the original volume of the mixture.

Example.—Make one-half gallon (80 fl. ozs.), of 60 p.c. Alcohol from Alcohol 90 p.c. 1 80 × 60 = 4800, and 4800 ÷ 90 = 53⅓.

Answer.—53⅓ fl. ozs. of 90 p.c. Alcohol are to be mixed with sufficient water to make, after contraction has ceased, 80 fl. ozs. of 60 p.c. Alcohol.

SUCCI. JUICES.

The prepared juices of fresh plant-drugs, rendered permanent by the addition of alcohol; or, the simple juices of ripe fruits.

They are crude, variable and unreliable preparations.

PREPARATION.—The prepared juices are obtained after the following manner: The fresh drug is bruised in a suitable mortar (wooden mortar and pestle preferred), the juice forcibly expressed and mixed with one-third its volume of rectified spirit. On standing for a period of seven days, gums, pectin and albuminous matters separate and deposit, and the liquid is to be filtered.

STRENGTH.—Three volumes juice in each four volumes.

Five Official Prepared Juices.

Succus Belladonnæ. Juice of Belladonna (leaves and young branches). Dose: 5 to 15 minims.

Succus Conii. Juice of Hemlock (leaves and young branches). Dose: 1 to 2 fluid drachms.

Succus Hyoscyami. Juice of Henbane (leaves, flowering tops and young branches). Dose: ½ to 1 fl. drachm.

Succus Scoparii. Juice of broom (tops). Dose: 1 to 2 fluid drachms.

Succus Taraxaci. Juice of Dandelion (root). Dose: 1 to 2 fluid drachms.

One Simple Juice.

Succus Limonis, Juice of lemon, freshly expressed from the ripe fruit of *Citrus medica, Linn.*, var. *β. Limonum, Hook. fil.* Specific gravity: 1·030 to 1·040. One fluid ounce contains 30 to 40 grains of citric acid. Dose: *Ad libitum.*

Preservation of Syr.

Fermentation & Mould

" (i.e souring) results from pouring syrup into a unclean or Carelessly rinsed or ~~wet~~ wet bottle as the ferment of small amount of old sour syr or rinse water will ruin best prepared syr Contains a insufficient amount of sugar as weak Saccharine liquids afford good opportunity for growth of certain micro-organism or syr may cont in excess of sugar which crystalizes out; leaves a rinsed Rig :: liable to ferment :

or prolonged Boiling, especially if acids are present - thereby causing a partial inversion of Cane sugar to invert or fruit sugar, which ~~is~~ may or may not deposit :: weakening syr & encouraging fermentation

or pouring hot syr to bottles & not entirely filling them as the ascending vapor condenses, runs down & dilutes surface which ferments & soon extends thorough entire mass

:: Keep in Bottles clean & dry well filled & Corked & frequently shaken till cold & keep cool

To detect fermentation

noted by fluidity :: frothiness & odor

Counteracted by boiling in some cases

generally detected out :

SYRUPI. SYRUPS.

Concentrated aqueous sugar solutions, either with or without medication, for internal use.

A dense solution of refined sugar in water, is known as Simple Syrup (*Syrupus*), and when impregnated with one or more medicinal substances, it is called a Medicated Syrup.

BASIS.—Sugar answers the two-fold purpose of preservative and desirable vehicle. Children can take medicines in the form of syrup, much more readily than in any other form.

PERMANENCY.—The preservative action of concentrated solutions of sugar is exhibited in the fact that these do not furnish nourishment for micro-organisms, since sugar abstracts water from the latter, which is essential to their cell growth. For this reason, the quantity of sugar requires careful adjustment, in order to ensure the preservation of the product.

As sugar serves as a preservative, not alone in proportion to the quantity present, but also in proportion to its purity, it is therefore necessary that only the best quality of refined sugar should be employed, free from ultramarine or other blue pigment.

About sixty-five per cent. of the best refined sugar is necessary to effectually protect syrups from fermentation and mold. In order to ensure the presence of the necessary proportion of sugar, the British Pharmacopœia wisely directs in most cases the weight or specific gravity to which the syrup shall be made, either by evaporation or dilution.

In a few instances, however, it appears that the amount of sugar which will dissolve in the medicated liquid is not sufficient to render the product permanent, hence preservation is aided by the addition of alcohol, as in syrups of Red Poppy, Lemon and Cascara, or glycerin, as in Syrup of Virginian Prune.

METHODS OF INCORPORATING SUGAR. 1.—Dissolving sugar by means of heat, in the previously medicated liquid. This method is resorted to in preparing the following syrups: Hemidesmus, Lemon, Rhubarb, Red Poppy, Rose, Squill, Senna, Tolu.

2. Adding the sugar in the form of previously prepared simple syrup, to the concentrated medicated solution. This method is chosen when the medicating principle is either a volatile constituent, or one

SYRUPI. SYRUPS—*Continued.*

sensitive to the action of heat, as in Aromatic Syrup, syrups of Orange, Orange Fls., Aromatic Cascara, Chloral, Codeine, Ferrous Iodide, Ferrous Phosphate, Ferrous Phosphate with Quinine and Strychnine, Ginger, Glucose.

3. Dissolving sugar in the cold medicated liquid by agitation, the medicated liquid being prepared by chemical solution, as in Syrup of Calcium Lactophosphate, or by percolation with water, Virginian Prune.

COLD PERCOLATION PROCESS.—Though the utmost care may be observed in the preparation of syrups, yet when heat is employed in dissolving the sugar, they often become moldy or undergo fermentative changes. It has been found that the heat employed is often the disturbing factor, as even simple syrup, when made at a boiling temperature, will, soon after it has been prepared, reduce Potassio-Cupric Tartrate Solution, showing the presence of grape-sugar, while in syrups made without heat, grape-sugar is formed very slowly, if at all. When acids are present, this deterioration goes on more rapidly, especially during prolonged boiling, therefore, the Cold Percolation Process, though unofficial, is worthy of mention and use, as it furnishes permanent and elegant syrups. It may be accomplished after the following manner:—Cork the lower orifice of a suitable conical percolator, and introduce with gentle pressure a moistened piece of loose cotton or soft sponge into the neck. Introduce the proper quantity of pure, refined, granulated sugar, pour upon it the water, or medicated liquid and allow to stand until the sugar has dissolved down to ***half its bulk***, then remove the cork and allow the syrup to drop. It should pass from the lower orifice perfectly transparent and clear, or if the first portion be turbid, it should be poured back again into the percolator, until it passes clear.

UNOFFICIAL.—The following officinal syrups are dispensed daily in Canada: *Syrupus Scillæ Compositus* (Hive Syrup, Croup Syrup), contains 5 grains each of squill and senega and one-eighth grain of tartarated antimony in each fluid drachm. Dose: 10 to 20 min. *Syrupus Phosphatum Compositus*, (Chemical Food), contains phosphates of calcium, iron (ferrous), potassium, sodium and ammonium. DOSE: ½ to 2 fl. drs. as a tonic.

DOSES.—The general dose of the official syrups is one-half to one fl. dr., with four exceptions, viz., syrups of Cascara Aromatic, Chloral, Codeine and Senna, are given in one-half to two fl. dr. doses.

Syr Sc. Co (Hinz Syr)
Ant. Tar 1 gr to 1 oz
Senega + squills
Syr Phos (Chemical food)
Syr Tolu contains Cinnamic Ac only

Sol Tolu
Bal Tolu	1 3/4 oz
S.V.R.	3 ft ʒ
Po $MgCO_3$	4 ft 9 ʒ
aq q.s.	8 0 gr

Diss Gums in misc of (Alc + Glycerine) over water bath add 6 oj H_2O & let stand till Cool (Resin Deposit) Pour milky liq from precip. agit: with $MgCO_3$ & stand 2 or 3 days in a cool place then Chill & filter & make to 20 oz by pouring thro' filter a mixture of { Rect Sp 1 Vol. / H_2O 2 "

Syr may be mixed 1 — 15 Syr.

Twenty-two Official Syrups

SYRUPI.

Names and Synonyms.	Important Ingredients.	Processes.	Strength.	Dose.
I. Unmedicated Syrups.—Two.				
Syrupus:				
Syrupus Syrup. Simple Syrup. Syrupus Sacchari.	Refined sugar and water.	Solution by heating.	Specific gravity 1·330. 1 in 1·5 (weight). 4 ozs. in 4·5 fl. ozs.	*Ad libitum.*
Glucosi Syrup Glucose.	Liquid glucose and syrup.	Admixture.	1 in 3 (weight.)	*Ad libitum.*
II. Syrups prepared by Infusion or Decoction.—Four.				
Hemidesmi Syrup Hemidesmus. Syrup Indian Sarsaparilla.	Root, bruised, sugar and water.	Infusion and solution.	1 in 10·5 (weight). 7 grs. in 1 fl. dr.	½ to 1 fl. dr.
Rhoeados Syrup of Red Poppy.	Red poppy petals, fresh, sugar, alcohol 90 p.c., and water.	Infusion and solution.	1 in 4·5 (weight). 15 grs. in 1 fl. dr.	½ to 1 fl. dr.
Rosæ Syrup of Roses.	Red rose petals, sugar and boiling water.	Infusion and solution.	1 in 23 (weight). 3 1-6 grs. in 1 fl. dr.	1 to 4 fl. dr.
Tolutanus Tolu Syrup. Syrup Balsam Tolu.	Tolu balsam, sugar and water.	Decoction and solution.	1 in 38·4 (weight). About 2 grs. in 1 fl. dr.	½ to 1 fl. dr.
III. Syrups prepared by Maceration or Percolation.—Five.				
Limonis Syrup Lemon.	Lemon juice and fresh peel, alcohol 90 p.c. and sugar.	Maceration and solution.	1 juice in 2·6 (weight) 1 in 2 (vol.).	½ to 1 fl. dr.
Pruni Virginianæ Syrup Virginian Prune. Syrup Wild Cherry Bark.	Virginian prune bark, glycerin, sugar and water.	Percolation and solution.	1 in 8·5 (weight) 8 1-4 grs. in 1 fl. dr.	½ to 1 fl. dr.

SYRUPI—*Continued.*

Names and Synonyms.	Important Ingredients	Processes.	Strength.	Dose.
Syrupus:				
Rhei Syrup Rhubarb.	Rhubarb root, coriander, each 20 powder, alcohol 90 p.c., sugar and water.	Percolation, evaporation and solution.	Specific gravity 1·31. 1 in 20 (weight). 33·4 grs. in 1 fl. dr.	½ to 2 fl. dr.
Sennæ Syrup Senna.	Senna, oil coriander 90 p.c., alcohol, powd. sugar and alcohol 20 p.c.	Maceration and solution.	1 in 2·5 (weight). 1 in 1·75 (vol.)	½ to 2 fl. dr.
Zingiberis Syrup Ginger.	Ginger, fine powd., alcohol 90 p.c., and syrup.	Percolation and solution.	1·5 grs. in 1 fl. dr.	½ to 1 fl. dr.
IV. Syrups made by Simple Admixture of Medicated Liquid with Sugar or Syrup.—Five.				
Aromaticus Aromatic Syrup.	Tinct. orange, cinnamon water, powd. talc and syrup.	Admixture and clarification.	1 tincture orange in 4.	½ to 1 fl. dr.
Aurantii Syrup Orange. Syrup Orange Peel.	Tinct. orange and syrup.	Admixture.	1 tinct. in 8 (vol.).	½ to 1 fl. dr.
Aurantii Floris Syrup Orange Flower.	Orange flower water (strong), sugar and boiling water.	Solution.	1 in 6 2-3 (vol.). 9 min. in 1 fl. dr.	½ to 1 fl. dr.
Cascaræ Aromaticus Aromatic Syrup Cascara.	Liq. ext. cascara, tinct. orange, alcohol 90 p.c., cinnamon water and syrup.	Admixture.	1 liq ext. in 2 1-2 (vol.). 24 grs. bark in 1 fl. dr.	½ to 2 fl. dr.
Scillæ Syrup Squill.	Vinegar squill and sugar.	Solution.	27 min in 1 fl. dr. 3·8 grs. squill in 1 fl. dr.	½ to 1 fl. dr.
V. Syrups Medicated with Substances of Definite Chemical Composition.—Six.				
Calcii Lactophosphatis Syrup Lactophosphate Calcium.	Ppt'd. $CaCO_3$, lactic and conc. phosphoric acids, sugar, orange flower water and water	Chemical solution.	1 fl. dr. represents 1·5 grs. $Ca_3(PO_4)_2$.	½ to 1 fl. dr.
Chloral Syrup Chloral.	Chloral hydrate, water and syrup.	Solution.	10 grs. in 1 fl. dr.	½ to 2 fl. dr.

Cinchonidia
5 - 6% alkaloids (½ to ¾ Quinine 1-5 + Cinchonidine 2-5

Ext. Cinchonia Liq (Glycer. HCl. water) 5% alkaloids

Tr " (70% alc) (Bath) 1% "

" " Co (70% alc (Tr) ½% "

Infusum Cinch acid (aromat- H_2SO_4 1-80) 1-20

{ Quinine Hydrochlor
  Vini Quin ½-1
  Tr " 30-60

Quin Hydrochlor Acid

Quinine Sulphas.

Pill Quin Sulph 2-8

Tr Ammon Quin 30-60

Ferri et- Quin Cit-

Syr Hypophos (1, ⅘, ⅓2) 30-60

Belladonna from stock

Liq Ext " (Repsc) (ale 7 - H2O 1. 3/4% Zn ale

" " (Liq ex + Milk.) 1% ale 1/4 - 1

Emp " (Liq Ext.) 1/2% ale

Tr " (Liq Ext + 60% ale) 1/20% 5 - 15

Ung " (" ") 6/10 %

Lin " (" " + Camphor) 3/8 %

Atropinae

Ung " 1 - 50

" Sulphas

Pannellae " " 1/5000

Liq " " # 1% + (1/2 - 1 m)

Nucis Vomi (1 - 4 gtt

Ext " " Liq (1 1/2% strych) (70%) 1 - 3

" " " (Liq + Milk S) 5% stry 1/4 - 1

Tr " " (Liq + H2O + Ales) (1/4% Stry) 5 - 15

Strychninae 1 tgt dissolved 1/60 - 1/15 -

L. " " (1 - 110) 2 - 8

Codeinæ Syrup Codeine. Syrup Phosphate of Codeine.	Codeine phosphate, water and syrup.	Solution.	1-4 gr. in 1 fl. dr.	½ to 2 fl. dr.
Ferri Iodidi Syrup Ferrous Iodide. Syrup Iodide of Iron.	Iron, iodine, sugar and water.	Chemical solution.	Sp. Gr. 1·380 to 1·387. 1 gr. in 11 minims 5-45 grs. in 1 fl. dr.	½ to 1 fl. dr.
Ferri Phosphatis Syrup Ferrous Phosphate. Syrup Phosphate of Iron.	Iron, conc. H_3PO_4, syrup and water.	Chemical solution.	1 gr. anhydrous salt in 1 fl. dr.	½ to 1 fl. dr.
Ferri Phosphatis c Quininæ et Strychninæ Syrup Phosphate Iron with Quinine and Strychnine. Syrup Triple Phosphates. Easton's Syrup.	Iron, conc. H_3PO_4, strychnine, quinine sulphate, syrup and water.	Chemical solution.	1 fl. dr. contains: 1 gr. anhyd. $Fe_2(PO_4)_2$. 4-5 gr. quinine sulphate. 1·32 gr. strychnine.	½ to 1 fl. dr.

Atkins Syp

TINCTURÆ. TINCTURES.

Solutions of non-volatile, or only partially volatile medicinal substances in liquids other than water and glycerin. Aqueous solutions of volatile substances are termed Medicated Waters (*Aquæ*), and solutions of similar substances in alcohol, Spirits (*Spiritus*), while solutions of volatile or non-volatile bodies in glycerin are termed Glycerins (*Glycerina*).

PREPARATION.—Maceration and percolation are the chief methods of preparation; thirty-one tinctures being made by maceration, twenty-nine by percolation, and seven by other methods. Of the thirty-one tinctures made by maceration, many may be advantageously prepared by percolation, the latter process being precluded only in connection with resins, oleo-resins, balsams, most gum-resins and drugs rich in extractive. The processes of percolation and maceration officially enjoined in preparing tinctures are substantially as follows:—

PERCOLATION.—In selecting percolators, the cylindrical form will, in most cases, be found very satisfactory, preferably made of glass or earthenware, and having a length at least six times its diameter. If the conical form be employed, the upper diameter should be not more than twice its lower diameter.

TINCTURÆ. TINCTURES—*Continued.*

The drug is first moistened with the prescribed quantity of menstruum, and set aside in a covered vessel for 24 hours. It is then packed in a percolator, regulating the pressure to be applied; lightly, moderately or firmly, in accordance with the texture of the drug. Further menstruum is then to be poured upon the packed drug in portions, at intervals, always maintaining a stratum of liquid above the drug, throughout the process. Allow the percolate to pass from the lower orifice of the percolator, slowly at first and afterwards less slowly, until a sufficient quantity of the menstruum has been applied to yield about seventy-five per cent. of the prescribed volume of the tincture, or until the drug has become exhausted. When the percolate ceases to pass, submit the marc to pressure in a suitable tincture-press. Set the expressed liquid aside for twenty-four hours, and filter, if necessary; mix the filtrate with the percolate, and then add a sufficient quantity of menstruum to produce the desired volume of tincture.

MACERATION.—The drug is to be mixed with all of the menstruum in a suitable vessel that can be tightly covered, and allowed to remain for seven days, frequently agitating. The mass is then strained and the marc submitted to pressure; the colature and expressed liquid are mixed and clarified, if necessary, by filtration or subsidence, or both.

MENSTRUA.—The menstrua employed in preparing the official tinctures are chiefly alcohol of various strengths, 60 p.c. alcohol being used in the greater number of cases.

Other liquids are, however, employed in exceptional cases, they are: spirit of ether, tincture of orange, mixtures of alcohol and water, alcohol with water and glycerin and alcohol with solution ammonia.

In all cases where Solution of Ammonia or Spirit of Ether is represented in the menstruum, the tinctures bear the corresponding distinguishing titles, *Ammoniated* or *Ethereal*.

PREPARED WITH RECTIFIED SPIRIT. ALCOHOL 90 PER CENT.:

Tinct. Aurantii, Benzoini Comp., Cannabis Ind., Cantharidis, Cubebæ, Chloroformi et Morphinæ, Guaiaci Ammon., Iodi, Lavandulæ Comp., Limonis, Myrrhæ, Opii Ammon., Podophylli, Quininæ (indirectly), Tolutana, Zingiberis.—16 tinctures.

Opium 9 1/2 – 10 1/2 anh Morph

Ext O. — (crude opii) 20% morph 1/4 – 1
" " Liq (Ext opii) (H2O + Alco) 3% morph (1/2 gr in 15 m.) 3 = 30
Tr " (Crude Op. (H2O + alc) 3/4% (1 gr opii in 15 m.) 1/2 – 1 or 20–30
" " camph (Tr opii) (3 gr – 15) (1/2 gr morph 3 i) 30–60
" " Camph (" " 1/2 (2 " " ") (1/2 " " ") 30–60
Extr opii (po. opii 1 – 10
Tr " (Tr opii 1 – 2
Supp opii Co (1 gr opii Do + 3 gr Pb Acet)
Inj Gallinae c op. 1 – 3 m
Pulv opii Co 1 – 10 (2 – 10)
" Ipecac " 1 – 16 (5 – 15)
" Kino Co 1 – 20 (5 – 20)
" Creta aromat c opii 1 – 40 (10 – 40)
Pill Plumbi c Opii ℞ – 2 – 4
" Saponis Co 2 – 4
" Ipecac &c 3 – 10
Morph acet – } 1/12 – 1/15 gr
" Tartrate }
" Hydrochlor
sol Liq Morph (all of above) 1% alc 25% 20–60
Inject M H. (Tartrate) 5% at – 2 – 5 –
Apomorphine Hydro. hc – 1/10 – 1/6 gr – 1/6 – 1/4 m a
Inj " " Hypo 1% 5 – 10 m
Codeine ——— 1/4 – 2 grs
" Phos 1/4 – 2 "
Syr. " (2 gr – 1 oz) — 1 – 4

In Ch. Cl. & Morph Co 1%

suppos. morph 1%

Troch Morph
" " & Ipecac } 1/3 Gr

Ipecac

X Fl Ex. . (2 - 2½%) (½ - 2) ♯ 20

Vini " (1 - 20 of Ext) (10 - 30) (4 - 6)

Acetic Dil (1 - 20 Ext) 0 - 30

Pill Ipecac C & S.

Pulv Ipecac Co.

Troch Ipecac 1/4

" " & Morph ½ - 1/31

PREPARED WITH DILUTED ALCOHOLS:

ALCOHOL 70 PER CENT.—Tinct. Aconiti, Arnicæ, Asafetidæ, Capsici, Cascarillæ, Cinchonæ, Cinchonæ Comp., Cinnamomi, Conü, Jalapæ, Pyrethri, Serpentariæ, Strophanthi, Sumbul.—14 tinctures.

ALCOHOL 60 PER CENT.—Tinct. Bel[illegible]æ, Buchu, Calumbæ, Camphoræ Comp., Cardamomi, Catechu, Chiratæ, Cimicifugæ, Cr[illegible]s, Ergotæ Ammon., Gelsemii, Hydrastis, Krameriæ, Lupuli, Quillaiæ, Quininæ Ammon., Rhei Comp., Scillæ, Senegæ, Valerianæ Ammon.—21 tinctures.

ALCOHOL 45 PER CENT.—Tinct. Aloes, Cocci, Colchici Sem., Gentianæ Comp., Hamamelidis, Hyoscyami, Jaborandi, Quassiæ, Sennæ Comp., Stramonii.—10 tinctures.

Mixtures of alcohol and water in varying proportions represent the menstrua for the following: Tinct. Ferri Perchloridi, Kino, Nucis Vomicæ, Opii, Pruni Virginianæ, Quassiæ.

Spirit of Ether is used in preparing Tinct. Lobeliæ Ætherea.

STRENGTHS.—There is an unnecessarily wide range in the strengths of tinctures, where greater uniformity might and should exist, and it is to be regretted, when viewed from the standpoint of the dispenser, that uniformity of strength has been sacrificed for uniformity of dosage.

Strength, 1 in 4, there are four tinctures; 1 in 5, twenty-two tinctures; 1 in 8, one tincture; 1 in 10, sixteen tinctures; 1 in 20, six tinctures; 1 in 40, three tinctures; 1 in 50, two tinctures; 1 in 80, two tinctures; 1 in 213, one tincture; miscellaneous, the nine standardized tinctures and tincture chloroform and morphine.

STANDARDIZED TINCTURES.—In order to ensure the presence of definite quantities of active constituents, the tinctures of certain alkaloidal and resinous drugs are submitted to prescribed methods of assay, and subsequently standardized. In some cases, they represent careful dilutions of concentrated standardized preparations. Such preparations will be known as Standardized Tinctures. Eight tinctures are represented in this class; (*vide* Group XII of Classification).

Tinctura:	*Standardized to contain:*
℣ Belladonnæ.—1-20th grain Alkaloids in 110 min. (0·05 gram in 100 c.m³), or,	
Tincture Belladonna.	1 Liquid Extract Belladonna in 15.
℣ Cinchonæ.—1 grain Alkaloids in 110 min. (1·0 gram in 100 c.m³).	
Tincture Cinchona.	

TINCTURÆ. TINCTURES—*Continued.*

Tinctura:	*Standardized to contain:*
Cinchonæ Composita. Compound Tinct. Cinchona.	0·5 grain Alkaloids in 110 min. (0·5 gram in 100 c.m³), or, 1 Tincture Cinchona in 2.
Jalapæ. Tincture Jalap.	1·5 grain Resin in 110 min. (1·5 gram in 100 c.m³).
Nucis Vomicæ. Tincture Nux Vomica.	0·25 grain Strychnine in 110 min. (0·25 gram in 100 c.m³). 1 Liquid Extract Nux Vomica in 6.
Opii. Tincture Opium.	0·75 grain Anhydrous Morphine in 110 min. (0·75 gram. in 100 c.m³). or, 1 grain Opium in 15 minims.
Opii Ammoniata. Ammoniated Tinct. Opium.	5 grains Opium, or 0·5 grain Anhydrous Morphine in 1 fl. oz., or, 3 Tincture Opium in 20.
Camphoræ Composita. Compound Tinct. Camphor.	1-4th grain Opium, or 1-40th grain Anhydrous Morphine in 1 fl. dr. (0·05 gram. Anhydrous Morphine in 100 c.m³). 1 Tinct. Opium in 16.

DOSAGE.—By sacrificing uniformity of strength, the official tinctures have had their compositions changed to such an extent, as to permit of greater uniformity of dose.

THIRTY TO SIXTY MINIMS is the dose of all official tinctures excepting the following:

FIVE TO FIFTEEN MINIMS.—Tinct. Belladonnæ, Cannabis Ind., Capsici, Chloroformi et Morphinæ, Cocci, Colchici Sem., Digitalis, Ferri Perchloridi, Gelsemii, Lobeliæ Ætherea, Nucis Vomicæ, Opii, Podophylli, Scillæ, Stramonii, Strophanthi—also Tinct. Aconiti, Cantharidis, when to be administered in single doses.—18 tinctures.

TWO TO FIVE MINIMS.—Tinctura Iodi and also Aconiti and Cantharidis, when the two last are to be administered in repeated doses.—3 tinctures.

Where two ranges of dosage are mentioned with certain tinctures, in the subjoined classification, the intimation is conveyed that such tinctures may, with different objects, be administered either in a single dose (the maximum range), or in repeated doses (the minimum range).

Jr Perth
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PRESERVATION.—Tinctures should be perfect solutions, and in order to keep them entirely transparent, evaporation of the volatile constituents must be prevented. They are best kept in tightly-stoppered bottles, in a room not subjected to great variations in temperature, and should not be exposed to direct sunlight. The size of containers should be adapted to the quantities likely to be used within a reasonable time.

TINCTURÆ. (*Classified according to strength*)

Sixty-six Official Tinctures.

NAMES AND SYNONYMS.	CHIEF INGREDIENTS.	PROCESS.	MENSTRUUM.	DOSE.
I. STRENGTH, 5 OZS. CHIEF INGREDIENT IN A PINT, OR 1 IN 4 (SO-CALLED 25 PER CENT.)—FOUR.				
Tinctura : Aurantii Tincture of Orange. Tincture Fresh Orange Peel.	Bitter Orange, fresh peel.	Maceration.	Alcohol 90 p.c.	30 to 60 min.
Ergotæ Ammoniata Ammoniated Tincture Ergot. Alkaline Tincture Ergot.	Ergot, 20 powder.	Percolation.	Alcohol 60 p.c., containing 10 p.c. of solution ammonia.	30 to 60 min.
Ferri Perchloridi Tincture Perchloride Iron. Tincture Sesquichloride Iron. Tincture of Iron. Tincture of Steel.	Strong solution ferric chloride.	Admixture.	Alcohol 90 p.c.-1. Water-2.	5 to 15 min.
Limonis Tincture of Lemon. Tincture Fresh Lemon Peel.	Fresh lemon peel, cut small.	Maceration.	Alcohol 90 p.c.	30 to 60 min.
II. STRENGTH, 4 OZS. CHIEF INGREDIENT IN A PINT, OR 1 IN 5 (SO-CALLED 20 PER CENT.)—TWENTY-ONE.				
Asafetidæ Tincture of Asafetida.	Asafetida, bruised.	Maceration.	Alcohol 70 p.c.	30 to 60 min.
Buchu Tincture of Buchu.	Leaves, 20 powder.	Percolation.	Alcohol, 60 p.c.	30 to 60 min.

TINCTURÆ—*Continued.*

Names and Synonyms.	Chief Ingredients.	Process.	Menstruum.	Dose.
Tinctura:				
Cascarillæ Tincture of Cascarilla.	Bark, 40 powder.	Percolation.	Alcohol 70 p.c.	30 to 60 min.
Catechu Tincture of Catechu.	Catechu, coarse powder, cinnamon bark, bruised.	Maceration.	Alcohol 60 p.c.	30 to 60 min.
Cinnamomi Tincture of Cinnamon.	Cinnamon bark, 40 powd.	Percolation.	Alcohol 70 p.c.	30 to 60 min.
Colchici Seminum Tincture Colchicum Seed. Tincture Meadow Saffron.	Seeds, 30 powder.	Percolation.	Alcohol 45 p.c.	5 to 15 min.
Conii Tincture of Conium. Tincture of Hemlock.	Fruits, recent, 40 powd.	Percolation.	Alcohol 70 p.c.	30 to 60 min.
Cubebæ Tincture of Cubebs.	Fruits, powdered.	Percolation.	Alcohol 90 p.c.	30 to 60 min.
Guaiaci Ammoniata Ammoniated Tincture Guaiac.	Resin, powdered, Oils lemon and nutmeg.	Maceration.	Alcohol 90 p.c. containing 8 p.c. of strong solution ammonia.	30 to 60 min.
Jaborandi Tincture Jaborandi. Tincture Pilocarpus.	Leaves, 40 powder.	Percolation.	Alcohol 45 p.c.	30 to 60 min.
Krameriæ Tincture of Rhatany.	Root, 40 powder.	Percolation.	Alcohol 60 p.c.	30 to 60 min.
Lobeliæ Ætherea Ethereal Tincture Lobelia.	Herb, 40 powder.	Percolation.	Spirit of ether.	5 to 15 min.
Lupuli Tincture of Hops.	Dried strobiles.	Maceration.	Alcohol 60 p.c.	30 to 60 min.

Myrrhæ Tincture of Myrrh.	Gum-resin, coarse powder.	Maceration.	Alcohol 90 p.c.	30 to 60 min.
Pruni Virginianæ Tincture Virginian Prune. Tincture Wild Cherry Bark.	Bark, 20 powder.	Maceration.	Alcohol 90 p.c.-5 Water-3	30 to 60 min.
Pyrethri Tincture of Pyrethrum. Tincture of Pellitory.	Root, 40 powder.	Percolation.	Alcohol 70 p.c.	
Scillæ Tincture of Squill. Tincture Sea-Onion.	Bulb, bruised.	Maceration.	Alcohol 60 p.c.	5 to 15 min.
Senegæ Tincture of Senega. Tincture of Seneka.	Root, 40 powder.	Percolation.	Alcohol 60 p.c.	30 to 60 min.
Sennæ Composita Compound Tincture Senna.	Senna leaflets, raisins, caraway and coriander fruits.	Maceration.	Alcohol 45 p.c.	30 to 60 min.
Serpentariæ Tincture of Serpentary. Tincture Virginian Snakeroot.	Rhizome, 40 powder.	Percolation.	Alcohol 70 p.c.	2 to 4 fl. dr. 30 to 60 min.
Stramonii Tincture of Stramonium.	Leaves, 20 powder.	Percolation.	Alcohol 45 p.c.	5 to 15 min.
Valerianæ Ammoniata Ammoniated Tincture Valerian.	Rhizome, 40 powd., oils, nutmeg and lemon.	Maceration.	Alcohol 60 p.c.—9 Sol. Ammonia—1	30 to 60 min.

III. Strength, 2½ ozs. Chief Ingredient in a Pint, or 1 in 8 (so-called 12½ per cent.)—One.

Digitalis Tincture of Digitalis. Tincture of Foxglove.	Leaves, 20 powder.	Percolation.	Alcohol 60 p.c.	5 to 15 min.

TINCTURÆ—*Continued.*

Names and Synonyms.	Chief Ingredients.	Process.	Menstruum.	Dose.
IV. Strength, 2 ozs. Chief Ingredient in a Pint, or 1 in 10 (so-called 10 per cent.)—Sixteen.				
[1]Benzoini Composita Compound Tincture Benzoin. Traumatic Elixir. Balsamic Tincture.	Benzoin, storax, tolu and Socotrine aloes.	Maceratioo.	Alcohol 50 p.c.	30 to 60 min.
Calumbæ Tincture of Calumba.	Root, 20 powder.	Maceration.	Alcohol 60 p.c.	30 to 60 min.
Chiratæ Tincture of Chiretta	Chiretta, 40 powder.	Percolation.	Alcohol 60 p.c.	30 to 60 min.
Cimicifugæ Tincture Cimicifuga. Tincture Actæa Racemosa. Tincture of Black Cohosh. Tincture of Black Snakeroot.	Rhizome, 40 powder.	Percolation.	Alcohol 60 p.c.	30 to 60 min.
Cocci Tincture of Cochineal.	Cochineal, powdered.	Maceration.	Alcohol 45 p.c.	5 to 15 min.
Gelsemii Tincture of Gelsemium. Tincture Yellow Jasmine.	Root, 40 powder.	Percolation.	Alcohol 60 p.c.	5 to 15 mio.
Gentianæ Composita Compound Tincture Gentian. Stoughton's Bitters. Stoughton's Elixir.	Gentian, bruised, bitter orange peel, cardamom seeds.	Maceration.	Alcohol 45 p.c.	30 to 60 min.
Hamamelidis Tincture of Hamamelis. Tincture Witch Hazel.	Bark, 20 powder.	Percolation.	Alcohol 45 p.c.	30 to 60 mio.

[1]Known also by the following synonyms: Friars' Balsam, Jesuits' Balsam, Turlington's Balsam, Wade's Balsam, Vervain's Balsam, St. Victor's Balsam, Persian Balsam and Swedish Balsam. Intended to take the place of numerous preparations formerly employed under these titles.

Hydrastis Tincture of Hydrastis. Tincture Goldenseal.	Rhizome, 60 powder.	Percolation.	Alcohol 60 p.c.	30 to 60 min.	
Hyoscyami Tincture of Hyoscyamus. Tincture of Henbane.	Leaves, 20 powder.	Percolation.	Alcohol 45 p.c.	30 to 60 min.	
Kino Tincture of Kino.	Kino, powdered.	Maceration.	Glycerin 3, water 5, alcohol 90 p.c., 12.	30 to 60 min.	
Quassiæ Tincture of Quassia. Tincture of Bitter Wood.	Wood, rasped.	Maceration.	Alcohol 45 p.c.	30 to 60 min.	
Rhei Composita Compound Tincture Rhubarb. Tincture Rhubarb, B.P. 1885.	Rhubarb root, 20 powd., cardamom, coriander and glycerin.	Percolation.	Alcohol 60 p.c.	30 to 60 min. 2 to 4 fl. dr.	
Sumbul Tincture of Sumbul. Tincture Musk Root.	Root, bruised.	Maceration.	Alcohol 70 p.c.	30 to 60 min.	
Tolutana Tincture Balsam Tolu. Tolu Tincture.	Tolu Balsam.	Maceration.	Alcohol 90 p.c.	30 to 60 min.	
Zingiberis Tincture of Ginger. "Oxley's Essence."	Rhizome, 40 powd.	Percolation.	Alcohol 90 p.c.	30 to 60 min.	

V. STRENGTH, 1 OZ. CHIEF INGREDIENT IN A PINT, OR 1 IN 20 (SO-CALLED 5 PER CENT).—SIX.

Aconiti Tincture of Aconite. Tincture Monkshood. Tincture Wolf bane.	Root, 40 powder.	Percolation.	Alcohol 70 p.c.	2 to 5 min. 5 to 15 min.
Amicæ Tincture of Arnica.	Rhizome, 40 powder.	Percolation.	Alcohol 70 p.c.	Externally.
Cannabis Indicæ Tincture of Indian Hemp.	Extract Indian Hemp.	Solution.	Alcohol 90 p.c.	5 to 15 min.

TINCTURÆ—*Continued.*

Names and Synonyms.	Chief Ingredients.	Process.	Menstruum.	Dose.
Tinctura:				
Capsici Tincture of Capsicum. Tincture Cayenne Pepper.	Capsicum fruits, 20 powder.	Maceration.	Alcohol 70 p.c.	5 to 15 min.
Croci Tincture of Saffron.	Saffron.	Maceration.	Alcohol 60 p.c.	5 to 15 min.
Quillaiæ Tincture of Quillaia. Tincture Soap Bark.	Bark, 20 powder.	Percolation.	Alcohol 60 p.c.	30 to 60 min.
VI. Strength, 320 gr. Chief Ingredient in a Pint, or 1 in 30 (so-called 3⅓ per cent.)—One.				
Podophylli Tincture of Podophyllum. Tincture Resin Podophyllum.	Podophyllum Resin, 2 grains in 1 fl. dr.	Maceration.	Alcohol 90 p.c.	5 to 15 min.
VII. Strength, ½ oz. Chief Ingredient in a Pint, or 1 in 40 (so-called 2½ per cent.)—Three.				
Aloes Tincture of Aloes.	Ext. Barb. aloes and liq. ext. liquorice.	Maceration.	Alcohol 45 p.c.	30 to 60 min. 1½ to 2 fl. dr.
Iodi Tincture of Iodine.	Iodine and potassium iodide.	Solution.	Alcohol 90 p.c.	2 to 5 min.
Strophanthi Tincture of Strophanthus.	Seeds, 30 powder.	Percolation.	Alcohol 70 p.c.	5 to 15 min.
VIII. Strength, 175 gr. Chief Ingredient in a Pint, or 1 in 50 (so-called 2 per cent.)—Two.				
Quininæ Tincture of Quinine.	Quinine hydrochloride.	Solution.	Tincture orange.	30 to 60 min.
Quininæ Ammoniata Ammoniated Tincture Quinine.	Quinine sulphate.	Solution.	Alcohol 60 p.c.-9, and Sol. ammon.-1.	30 to 60 min.

IX. Strength, ¼ oz. Chief Ingredient in a Pint, or 1 in 80 (so-called 1¼ Per Cent.).—Two.				
Cantharidis Tincture of Cantharides. Tinctura Cantharidum. Tincture Spanish Fly.	Cantharides, 40 powder.	Maceration.	Alcohol 90 p.c.	2 to 5 min. 5 to 15 min.
Cardamomi Composita Comp. Tinct. Cardamoms.	Cardamoms, caraway, raisins, Cinnamon and cochineal.	Maceration.	Alcohol 60 p.c.	30 to 60 min.
X. Strength, 45 Minims Chief Ingredient in a Pint, or 1 in 213.—One.				
Lavendulæ Composita Comp. Tincture Lavender. Componnd Spirit Lavender. Lavender Drops.	Oils lavender and rosemary, cinnamon, nutmeg, and red saunders.	Maceration.	Alcohol 90 p.c.	30 to 60 min.
XI. Miscellaneous.—One.				
***Chloroformi et Morphinæ Composita** Componnd Tincture Chloroform and Morphine. "Chlorodyne."	Chloroform, morph. hydrochlor., dil. HCN, tinctures capsicum and cannabis, etc.	Admixture.	Alcohol 90 p.c.	5 to 15 min.
XII. Standardized Tinctures.—Eight. Containing Specified Quantities of Active Principle.				
Belladonnæ Tincture of Belladonna. Tincture Belladonna Root.	Liquid extract belladonna (root).	Admixture.	Alcohol 60 p.c. ⅛ p.c. alkaloid.	5 to 15 min.
Cinchonæ Tincture of Cinchona. Tincture Peruvian Bark. Tincture Red Bark.	Red cinchona bark, 40 powd.	Percolation and standardization.	Alcohol 70 p.c. 1 p.c. alkaloid.	30 to 60 min.
Cinchonæ Composita Compound Tincture Cinchona. Huxham's Tincture.	Tincture cinchona, bitter orange peel, serpentary cochineal and saffron.	Maceration.	Alcohol 70 p.c. 1 tinct. in 2. ⅛ p.c. alkaloid.	30 to 60 min.

*Compound Tincture of Chloroform and Morphine.—Each ten-minim dose contains: chloroform, 3-4 minim; morphine hydrochloride, 1-11 grain; diluted hydrocyanic acid, 1-2 minim; tincture capsicum, 1-4 minim; tincture Indian hemp, 1 minim; oil peppermint, 1-70 minim; and glycerin, 2 1-2 minims.

TINCTURÆ—*Continued.*

NAMES AND SYNONYMS.	CHIEF INGREDIENTS.	PROCESS.	MENSTRUUM.	DOSE.
Tinctura :				
Jalapæ Tincture of Jalap.	Jalap, 40 powder.	Percolation and standardization.	Alcohol 70 p.c. 1½ p.c. resin.	30 to 60 min.
Nucis Vomicæ Tincture of Nux Vomica.	Liquid extract nux vomica.	Admixture.	Alc. 70 p.c.-7, water-3 1 liquid extract in 6. ¼ p.c. strychnine	5 to 15 min.
Opii Tincture of Opium. Laudanum. Tinctura Thebaica.	Opium.	Maceration and standardization.	Alcohol 90 p.c.-1 Water-1 1 grain opium in 15 min. ⅔ p.c. morphine.	5 to 15 min. 20 to 30 min.
Opii Ammoniata Ammoniated Tincture Opium. Scotch Paregoric.	Tincture opium, benzoic acid and oil anise.	Solution.	Alcohol 90 p.c. and sol. ammon. 3 tinct. opium in 20. 5 grains opium to 1 fl.oz.	30 to 60 min.
Camphoræ Composita Compound Tincture Camphor. Camphorated Tincture Opium. Elixir Paregoric. Paregoric.	Tincture opium, beozoic acid, oil anise aod camphor.	Solution.	Alcohol 60 p.c. ½ gr. opium in 1 fl. dr. ⅓₀ p.c. morphine.	30 to 60 min.

aloes & myrrh } aloes 1½ in 10 alcohol 1 – 2ʒ
Elix Pro myrrh 1

Imp. Tr Capsici et myrr capsici 1 } in 30 " 10 – 30
Hr-Drops myrrh 4 }
No 6.

Liq opii sedativus Liq opii
Battleys sedative 1½ strength Liq Eos or Tr 5 – 20

Sr Opii Decator ~~top~~ 1 of Opii ~ 10 5-30

VINA, WINES, (MEDICATED).

Solutions of organic or inorganic medical substances in sherry or orange wioe.

These preparations are analogous to the tinctures, but differ in menstrua, which contains a smaller and somewhat variable quantity of alcohol, together with extractive matter and potassium and calcium salts of tartaric acid. This class possesses no advantageous features over the ever popular tinctures, excepting that the wines contain less alcohol, and hence possess a less stimulating effect, which often interferes with the action of certain sedatives, expectorants, etc.

METHODS OF PREPARATION.—Solution, maceration and simple admixture.

MENSTRUA.—Vinum Xericum (Sherry), is the chief menstruum. It is a so-called *pale* wine, on account of its pale, yellowish-brown color (or absence of red color), due to the fermentation of grape juice without contact with the skins and seeds. It contains only minute portions of tannin, and should show not less than 16 per cent. of ethyl hydroxide, by volume. It is used in the preparation of four official wines.

Vinum Aurantii is used as a mensfruum in two preparations, Wine Citrate of Iron and Wine Quinine. It is the product of the fermentation of a saccharine solution to which fresh bitter orange peel has been added. Should contain 10 to 12 per cent. ethyl hydroxide by volume, should be but slightly acid to litmus paper and should not give reactions for salicylic acid.

Unless the wine employed as menstruum contains the requisite proportion of ethyl hydroxide, the resulting medicated wine soon becomes ropy and sour, owing to acetic and mucous fermentation. It is, therefore, necessary to examioe the wioe quantitatively for spirit, and if deficient, alcohol should be added.

VINA.

Eight Official Wines, including the unmedicated Wines.

NAMES AND SYNONYMS.	INGREDIENTS.	STRENGTH.	PROCESS.	DOSE.
I. SIMPLE UNMEDICATED WINES.—TWO.				
Vinum:				
Aurantii Orange Wine.	Saccharine liquid and fresh bitter orange peel.	10 to 12 p.c. ethyl hydroxide, (vol.).	Fermentation.	
Xerici Sherry. Spanish Wine.	Grape juice.	At least 16 p.c. ethyl hydroxide, (vol.).	Fermentation.	

VINA—*Continued.*

Names and Synonyms.	Ingredients.	Strength.	Process.	Dose.
II. Representing Solutions of Inorganic Salts.—Three.				
Antimoniale Antimonial Wine.	Tartarated antimony, boiling water and sherry.	2 grs. in 1 fl. oz.	Solution.	10 to 30 min. expectorant. 2 to 4 fl. dr. emet.
Ferri Iron Wine. Steel Wine.	Iron wire and sherry.	Indefinite amount of tartarated iron.	Maceration.	1 to 4 fl. dr.
Ferri Citratis Wine of Citrate of Iron.	Citrate of iron and ammonium and orange wine.	1 grain in 1 d. dr.	Solution.	1 to 4 fl. dr.
III. Representing Solutions of Plant-Drug Principles.—Three.				
Colchici Colchicum Wine.	Corm., 20 powder, and sherry.	1 in 5.	Maceration.	10 to 30 min.
Ipecacuanhæ Ipecacuanha Wine. Hippo Wine.	Liq. Ext. Ipecacuanha and sherry.	1 in 20. 1 fl. oz. = 24 mins., or 1-40 grain alkaloids.	Admixture.	10 to 30 min. expectorant. 4 to 6 fl. dr. emet.
Quininæ Quinine Wine.	Quinine hydrochloride and orange wine.	1 gr. in 1 fl. oz.	Solution.	½ to 1 fl. oz.

(Vini Ergot) 15·%

(Vini Opii Sydenhams S.) Ed Opii &c 1 – 20 10-30

PART II.

SOLID PREPARATIONS OF THE BRITISH PHARMACOPOEIA

ALKALOIDES. ALKALOIDS.

Mostly solid, crystallizable, colorless, nitrogenous principles of vegetable origin, representing the active principles of the plants producing them. Animal Alkaloids are termed Ptomaines and Leucomaines.

PROPERTIES.—Alkaloids have an alkaline reaction, and combine with acids to form salts, and therefore in these features resemble alkalies, but differ from them, in that they do not saponify fats, and are destroyed by strongly heating.

COMPOSITION.—They all contain the elements, C., H., and N., and with few exceptions, O., as well, hence are *Compound Ammonias*, those containing no O., are liquids and volatile, and are called *Amines*, while those having O., in their composition are *Amides*.

Existence.—They do not exist naturally in a free state, but as acid or neutral salts of some common vegetable acid, as Tannic, Citric, Malic, etc., or some acid peculiar to the plant, as Kinic (in Cinchona), Meconic (in Opium), Igasuric (in Nux Vomica), etc. These salts are known as the *Native Alkaloidal Combinations* or *Native Salts*.

SOLVENTS.—Free Alkaloids are, as a rule, insoluble in water, and differ among themselves as to their solubilities in the solvents immiscible with water, *e.g.*, Ether, Chloroform, Benzin, etc., while the alkaloidal salts are, with few exceptions, soluble in water or alcohol, but insoluble in solvents immiscible with water.

INCOMPATIBLES.—Tannins, Picric Acid, Mercuric Chloride, Alkaline Oxides, Hydroxides or Carbonates, Lead Acetate and Subacetate, Iodides, Bromides, etc., all of which are inclined to cause precipitation of the alkaloid from its solution.

ALKALOIDES.

Twenty-four Official Alkaloids (including the alkaloidal salts).

Names, Synonyms, Chemical Formulæ.	Sources.	Solubilities.	Medicinal Uses. Dose.	Official Preparations.
Aconitina Aconitine. $C_{32}H_{43}NO_{12}$	Aconite Root (*Aconitum Napellus*).	Water, alm. insol. Alcohol, readily Ether, slightly Chlorof., readily	Externally: Anodyne, General Depressant.	Ointment. 1 - 30
Apomorphinæ Hydrochloridum Apomorphine Hydrochloride. $C_{17}H_{17}NO_2 \cdot HCl$.	Morphine or Codeine Hydrochloride	Water, 50 Alcohol, 45 Ether, sl. sol. Chlorof., sl. sol.	Powerful emetic, 1-20 to 1-10 gr. hypoderm. 1-10 to 1-4 gr. *per ora*.	Hypodermic Injection. 1 in 70
Atropina Atropine. $C_{17}H_{23}NO_3$.	Belladonna Leaves or root (*Atropa Belladonna*).	Water, 300 Alcohol, 3 Ether, 16 Glyc., 50	Externally: Anodyne, Anæsthetic. Internally: Cardiac Stim., Antihydrotic, Narcotic, Mydriatic. Dose of each, 1-200 to 1-100 grain	Ointment. 1 - 30
Atropinæ Sulphas Atropine Sulphate. $(C_{17}H_{23}NO_3)_2 \cdot H_2SO_4$.	Atropine.	Water, 1 Alcohol, 10 Ether, Ins. Chlorof., ins.		Discs. 1/100 Solution. 1%
Caffeina Caffeine, Theine, Guaranine. $C_8H_{10}N_4O_2 \cdot H_2O$.	Tea lvs. (*Camellia Thea*) or Coffee seeds (*Coffea arabica*).	Water, 80 Alcohol, 33 Ether, 555 Chlorof., 7	Cerebral Stimulant. 1 to 5 grains.	Caffeine citrate.
Caffeinæ Citras Caffeine Citrate. $C_8H_{10}N_4O_2 \cdot H_2C_6H_6O_7$.	Caffeine and Citric acid, equal parts.	Water, 52 Alcohol 1 Citric acid 2 freely	Cerebral Stimulant. 2 to 10 grains.	Effervescent Caffeine Citrate. 1 - 25
Cocaina Cocaine. $C_{17}H_{21}NO_4$.	Coca leaves. (*Erythroxylum Coca*).	Water, alm ins. Alcohol, 10 Ether, 4 Chlorof., 0·5 Olive Oil, 12	Local Anæsthetic and Anodyne.	Ointment. 1 - 20
Cocainæ Hydrochloridum Cocaine Hydrochloride. $C_{17}H_{21}NO_4 \cdot HCl$.	Cocaine.	Water, 0·5 Alcohol, 4 Glyc., 4 Ether, alm. ins.	Anod., Local Anæsthetic, 1-5 to 1-2 grain.	Hypodermic Injection. 1 in 70 Discs. 1/100 1% Comp. Lozenge. 1 in

Oleic acid used in ointments - Constituents of alkaloids

Codeina Codeine. $C_{17}H_{18}(CH_3)NO_2 \cdot H_2O$.	Opium or morphine.	Water, 80 Alcohol, 3 Ether, 30 Chlorof. 2	Anodyne, Sedative. 1-4 to 2 grains.	None.
Codeinæ Phosphas Codeine Phosphate. $C_{17}H_{18}(CH_3)NO_2 \cdot H_3PO_4$.	Codeine and phosphoric acid.	Water. 4	Anodyne, Sedative. 1-4 to 2 grains.	Syrup.
Homatropinæ Hydrobromidum Homatropine Hydrobromide. $C_{16}H_{21}NO_3 \cdot HBr$.	Tropine (Decomposition product of atropine).	Water, 6 Abs. alcohol, 133	Mydriatic. 1-80 to 1-20 grain.	Discs.
Hyoscinæ Hydrobromidum Hyoscine Hydrobromide. Scopolamine Hydrobromide. $C_{17}H_{21}NO_4 \cdot HBr \cdot 3H_2O$.	*Hyoscyamus Scopola*, and other solanaceous plants.	Water, 1 Alcohol, 13 Ether, sl. sol. Chlorof., sl. sol.	Hypnotic. Cerebral Sed. 1-200 to 1-100 grain.	None.
Hyoscyaminæ Sulphas Hyoscyamine Sulphate. $(C_{17}H_{23}NO_3)_2 \cdot H_2SO_4 \cdot 2H_2O$.	Hyoscyamus and other solanaceous plants.	Water, 0·5 Alcohol, 2·5 Ether, alm. ins. Chlorof., alm. ins.	Anodyne, Hypnotic. Narcotic. 1-200 to 1-100 grain.	None.
Morphinæ Acetas Morphine Acetate. $C_{17}H_{19}NO_3 \cdot HC_2H_3O_2 \cdot 3H_2O$.	Morphine and acetic acid.	Water, 2·5 Alcohol, 100 Ether, alm. ins. Chlorof. alm. ins.	Anodyne, Sedative, Hypnotic, Narcotic. 1-8 to 1-2 grain.	Solution.
Morphinæ Hydrochloridum Morphine Hydrochloride. $C_{17}H_{19}NO_3 \cdot HCl \cdot 3H_2O$.	Opium (*Papaver somniferum*).	Water, 24 Water, boiling, 1 Alcohol, 50	Anodyne, Sedative, Hypnotic, Narcotic. 1-8 to 1-2 grain.	Sol., Suppos., Lozenges, Comp. Loz., Tr. Chlor and Morphine.
Morphinæ Tartras Morphine Tartrate. $[C_{17}H_{19}NO_3)_2 \cdot H_2C_4H_4O_6 \cdot 3H_2O$.	Morphine and tartaric acid.	Water, 11 Alcohol, alm. ins.	Anodyne, Sedative, Hypnotic, Narcotic. 1-8 to 1-2 grain.	Hypodermic Injection. Solution.
Physostigminæ Sulphas Physostigmine Sulphate. ~~Eserine Sulphate.~~ $(C_{15}H_{21}N_3O_2)_2 \cdot H_2SO_4$.	Calabar bean (*Physostigma venenosum*).	Water, v. sol. Alcohol, v. sol.	Spinal Sedative, Myotic. 1-60 to 1-20 grain.	Discs.
Pilocarpinæ Nitras Pilocarpine Nitrate. $C_{11}H_{16}N_2O_2 \cdot HNO_3$.	Jaborandi leaves (*Pilocarpus Jaborandi*).	Water, 9 Alcohol, sl. sol. Alcohol, hot, freely	Diaphoretic, Diuretic, Myotic. 1-20 to 1-2 grain.	None.

ALKALOIDES—*Continued.*

Names, Synonyms, Chemical Formulæ.	Sources.	Solubilities.	Medicinal Uses. Dose.	Official Preparation.
Quininæ Hydrochloridum Quinine Hydrochloride. $C_{20}H_{24}N_2O_2 \cdot HCl \cdot 2H_2O$.	Cinchona and Remijia barks.	Water, 35 Water, boiling, v. sol. Alcohol, 3 Chlorof. 9	Tonic, Antipyretic, Antiperiodic. 1 to 10 grains.	Tincture, Wine.
Quininæ Hydrochlor. Acidum Acid Quinine Hydrochloride. $C_{20}H_{24}N_2O_2 \cdot 2HCl \cdot 3H_2O$.	Cinchona and Remijia barks.	Water, less than 1	Tonic, Antipyretic, Antiperiodic. 1 to 10 grains.	None.
Quininæ Sulphas Quinine Sulphate. $[(C_{20}H_{24}N_2O_2)_2 \cdot H_2SO_4]_2 \cdot 15H_2O$.	Cinchona and Remijia barks.	Water, 800 Alcohol, 65 Chlorof., 680 Glycerin, 40	Tonic, Antipyretic, Antiperiodic. 1 to 10 grains.	Iron and Quin. Cit. Pill. Ammon. tinct. Syr. 3 Phos.
Strychnina Strychnine. $C_{21}H_{22}N_2O_2$.	Seeds of Nux-vomica and other species of *Strychnos*.	Water, 6700 Alcohol, 150 Ether, ins. Chlorof., 6	Tonic. Spinal Stimulant. 1-60 to 1-15 grain.	Syr. 3 Phos.
Strychninæ Hydrochloridum Strychnine Hydrochloride. $C_{21}H_{22}N_2O_2 \cdot HCl \cdot 2H_2O$.	Seeds of Nux-vomica and other species of *Strychnos*.	Water, 35 Alcohol, 60	Tonic. Spinal Stimulant. 1-60 to 1-15 grain.	Solution.
Veratrina Veratrine. A mixture of alkaloids.	Cevadilla seeds (*Schœnocaulon officinalis*).	Water, ins. Alcohol, 3 Ether, 6 Chlorof., 3	Externally. Local irritant. Insecticide.	Ointment.

CHARTÆ. PAPERS. (MEDICATED PAPERS, SPARADRAPS).

Pieces of unsized-, or cartridge-paper, impregnated with a medicatiog suhstance.

Medicated papers are made hy (1) dipping sheets of unsized paper in a solution of the active suhstance, and then exposing to warm air until dry; or (2) hy applying the medicating mixture in a thin film, upon one side of cartridge-paper, and drying hy exposure to air.

MANNER OF USING.—Some are ignited, and the fumes given off while hurning, inhaled (Charta Potassii Nitratis), or allowed to permeate the atmosphere of the room for the purpose of fumigation (Charta Odoriferi). Some are employed in chemical analysis, as indicators, to show the presence of acids, alkalis, or other chemical suhstances (Chartæ Lacmi, Curcumae, Plumhi Acetatis, Cupri Sulphatis, etc.), and are simply hrought into contact with the solution or vapor of the suhstance to be tested. Others are for external application to the body, for the purpose of producing irritation or counter-irritation, as Chartæ Sinapis, Cantharidis vel Epispastica, as well as certain of the so-called "corn-plasters" cootaioing verdigris, formerly known as *Sparadrapa*.

One Official Paper.

Charta Sinapis. Mustard Paper. Sinapism. INGREDIENTS.—Black and white mustard seeds, freed from fixed oil hy percolation with benzol and dried and powdered, then incorporated with solution of India-ruhber, and applied upon one side of cartridge-paper and air-dried.

CONFECTIONES. CONFECTIONS. (PRESERVES).

Soft solids, in which one or more medicinal substances have been incorporated with syrups, sugar or honey, with the ohject of rendering them palatahle and preserving them from change.

An ancient class of preparations, fast becoming obsolete, and frequently koown hy the terms, *Conserve* and *Electuary*.

CONSERVES are preparations made hy incorporating moist drugs with dry sugar, and ELECTUARIES hy mixing dry, powdered drugs with moist saccharine suhstances, as honey, pulps, syrups, etc.

Linctus a thin confection to be swallowed in small doses for relief on throat—

CONFECTIONES.

Four Official Confections.

Names and Synonyms.	Ingredients.	Strength.	Dose.
Confectio:			
Piperis Confection of Pepper. Ward's Paste.	Black pepper, caraway and clarified honey.	1 in 10.	60 to 120 grs.
Rosæ Gallicæ Confection of Roses.	Fresh red rose petals, and sugar.	1 in 4.	(1 dr. upwards).
Sennæ Confection of Senna. Lenitive Electuary.	Senna, coriander, figs, tamarind, cassia pulp, prunes, ext. liquorice, sugar and water.	1 in 11 about.	60 to 120 grs.
Sulphuris Confection of Sulphur.	Sulphur, potass. bitart., syrup, tinct. orange peel, and powd. tragacanth.	1 in 2½ about.	60 to 120 grs.

EMPLASTRA. PLASTERS.

Solid, tenacious preparations for external use only; they are harder than ointments, but become flexible and adhesive at the temperature of the body, and require heat to spread them. Plasters can be made to serve the double purpose of offering both support and medication to the parts to which they are applied.

Preparation.—They are prepared by incorporating medicinal substances with certain bases, viz.: Lead Plaster, Resin Plaster, Gum-Resins, or Resins, and are then spread evenly on sheep-skin, chamois-skin, kid-skin, muslin, or adhesive-plaster.

The Official Plasters are kept in stock in the form of rolls or cylinders of convenient diameter, weighing from four to eight ounces; they are gotten into this form by rolling on a stone or glass slab, previously moistened with water or expressed oil of almonds, and the resulting rolls are tightly wrapped in wax paper to protect them from the air. Unless kept from direct contact with air, the plaster-mass becomes hard and brittle and does not melt readily, or, when melted, does not give the homogeneous mass essential to the preparation of a uniformly spread plaster with a smooth surface, whether spread by means of a plaster-iron, or otherwise.

Unofficial.—Most of the plasters in common use are prepared in large manufactories and contain Caoutchouc combined with certain aromatic resins (Olibanum, Burgundy Pitch, Resin, etc.); they are spread on suitable cloth by machinery and are ready for use. As these are preferred on account of their adhesiveness and flexibility, the pharmacist is only occasionally called upon to spread other than Cantharides Plaster.

The India-rubber base admits of ready incorporation with numerous medicating principles, and possesses many important advantages over the ordinary lead-plaster and resinous bases.

℞ aromatic Confection ℈ Pulv Cretæ Aro

Emp Ichthyocolla
Isinglass or fresh Glue (Count Abadie)

Emp Myelabris made of Cantharides
" " Californ " - - -

EMPLASTRA.

Twelve Official Plasters.

Names and Synonyms.	Inoredients.	Strenoth.
I. Plasters having Miscellaneous Bases.—Four.		
Emplastrum: Ammoniaci cum Hydrargyro Ammoniacum and Mercury Plaster.	Ammoniacum, mercury, olive oil and sublimed sulphur.	20 p.c. mercury.
Picis Pitch Plaster.	Burgundy pitch, frankincense, resin, wax, olive oil and water.	50 p.c. Burg. pitch.
Menthol Menthol Plaster.	Menthol, yellow wax and resin. Use moderate heat.	15 p.c. menthol.
Cantharidis Cantharides Plaster. Blister Plaster. Emplastrum Lyttæ.	Powd. cantharides, yellow wax, lard, resin and soap plaster.	35 p.c. canthar.
II. Those having a Lead-Plaster Basis.—Five.		
Hydrargyri Mercurial Plaster.	Mercury, olive oil, sublimed sulphur and lead plaster.	33 1-3 p.c. merc.
Plumbi Lead Plaster. Diachylon Plaster. Litharge Plaster.	Lead oxide, powdered, olive oil and water.	About 100 p.c. oleate lead.
Plumbi Iodidi Iodide of Lead Plaster.	Lead iodide, resin and lead plaster.	10 p.c. PbI_2.
Resinæ Resin Plaster. Adhesive Plaster.	Resin, curd soap and lead plaster.	10 p.c. resin.
Saponis Soap Plaster.	Hard soap, resin and lead plaster.	1 in 7, about.
III. Those having a Resin-Plaster Basis.—Three.		
Belladonnæ Belladonna Plaster.	Liquid extract belladonna and resin plaster.	4 belladonna in 6, or 0·5 p.c. alkaloids.
Calefaciens Warming Plaster. Warm Plaster.	Cantharides, yellow wax, resin, soap plaster, boiling water and resin plaster.	4 p.c. canthar.
Opii Opium Plaster. Anodyne Plaster.	Powdered opium and resin plaster.	10 p.c. opium.

EXTRACTA. EXTRACTS.

Preparations representing the medicinal principles of plant-drugs together with extractive, obtained in the form of a solutinn and evaporated or distilled to a solid or semi-solid consistence.

PREPARATION.—The medicinal principles may be separated, either by forcibly expressing the crude drugs while in their fresh and juicy state, or by exhausting the dried and powdered drugs with appropriate menstrua, wherehy the inspissated juices, or the aqueous, alcoholic or ethereal extracts are obtained.

FRESH, GREEN EXTRACTS OR INSPISSATED JUICES.—If the crude drug represents a portion of the plant which cnntains Chlorophyll (green cnloring matter), this principle is retained in the finished product, as it gives to extracts a better consistence than they would otherwise have, and keeps them in better conditinn. Alhumin, if present, promotes decomposition, and hence is rejected. Whenever it is possible to do so, starch is rejected for the same reason.

PREPARATION OF GREEN EXTRACTS, IN WHICH THE CHLOROPHYLL IS RETAINED.—The fresh drug is bruised in a stnne mnrtar, forcihly expressed, and the juice gradually heated to 130° Fahr. (54·4° Cent.), to cnagulate the Chlnrophyll, which is cnllected hy straining through calico, and reserved. The clear filtrate is then heated to 200° Fahr. (93·3° Cent.), to coagulate albuminnus matter, and again strained to remove the Alhumin, which is rejected. By means of a water-bath, the juice is evaporated to a syrupy consistence, and the reserved Chlnrophyll incorporated with it by passing through a hair sieve. Evaporatinn below 14n° Fahr. (60° Cent.), then follnws, with vigornus stirring, until it is of the required consistence, a snft extract.

PROCESS WHEN CHLOROPHYLL IS ABSENT.—Bruise, express and allow the juice to deposit the feculence (*starchy matter*); heat the clear liquid to 212° Fahr. (100° Cent.), to coagulate Albumin, which is to be removed hy straining through flannel, and the liquid evaporated at 160° Fahr., to a soft extract.

OTHER PROCESSES.—The varinus processes invnlved in the preparation of the remaining official extracts include infusion, decoction, percolatinn, evaporation and distillatinn.

CONSISTENCE OF EXTRACTS.—Dependent upon whether the extract has hygroscopic properties or tends to lose moisture. As a rule, it is de-irable to reduce the solution to that conditinn which leaves little

tendency to absorb or lose moisture under ordinary keeping; extracts of Colchicum, Gentian, Ergot and Taraxacum re-absorb moisture, while extracts of Aloes, Rhatany, Rhubarb, Cascara Sagrada, etc., have opposite tendencies, and are inclined to become hard, dry and brittle.

Those prepared in the form of *Soft Extracts* are: Extracta Anthemidis, Belladonnæ Viride, Cannabis Ind., Colchici, Ergotæ, Gentianæ, Glycyrrhizæ, Hyoscyami Viride, Taraxaci—9 extracts.

Pilular Extracts:—Extracta Belladonnæ Alc., Colocynth. Comp., Jalapæ, Nucis Vomicæ, Physostigmatis, Stramonii—6 extracts.

Dry Extracts.—Extracta Aloes Barb., Cascaræ Sagradæ, Krameriæ, Rhei—4 extracts.

Powdered Extracts:—Extracta Euonymi Siccum, Strophanthi—2 extracts; and Extractum Opii to fifty per cent. of the weight of the drug.

STANDARDIZED EXTRACTS.—The following preparations are made to contain specified quantities of active constituents, by being prepared from drugs or preparations previously assayed or standardized, or are themselves directly assayed and then standardized; they are

Extractum:

Belladonnæ Alcoholicum.—Made from the Liquid Extract, and contains one per cent. of the Alkaloids of Belladonna Root.

Nucis Vomicæ.—Made from the Liquid Extract, and contains five per cent. of Strychnine.

Opii.—Made from sliced Opium, and contains twenty per cent. of Morphine.

DOSAGE.—In order to reduce considerably the great variations formerly existing in the doses of Extracts, they have been so prepared that the majority of them have a dose of 1-4th to 1 grain, or from 2 to 8 grains. This uniformity of dosage has become possible, in several instances, through the addition of milk sugar before completing the extract, as in Extracta Belladonnæ Alc., Physostigmatis, Nucis Vomicæ and Strophanthi; or of 20 p.c. of Calcium Phosphate, as in Dry Extract of Euonymus.

EXTRACTA. EXTRACTS—*Continued.*

The following have doses :

1-4th to 1 grain—Belladonnæ Viride, Belladonnæ Alc., Cannabis Indicæ, Colchici, Nucis Vomicæ, Opii, Physostigmatis, Stramonii, Strophanthi—9 extracts.

1 to 4 grains—Extractum Aloes Barb.

2 to 8 grains—Extracta Anthemidis, Cascaræ Sagradæ, Colocynthidis Comp., Ergotæ, Gentianæ, Hyoscyami Viride, Jalapæ, Rhei—8 extracts.

1 to 2 grains—Extractum Euonymi Siccum. 5 to 15 grains—Extracta Krameriæ, Taraxaci.

Ad libitum—Extractum Glycyrrhizæ.

EXTRACTA.

Twenty-two Official Extracts.

Names and Synonyms.	Ingredients.	Process.	Consistence.	Strength. Menstruum.	Dose.
Class I. Juice Extracts.—Four.					
Group (a). Those Containing Chlorophyll. Made from Portions of Plants Grown above Ground.—Two.					
Extractum: Belladonnæ Viride. Green Extract Belladonna.	Fresh leaves and young branches.	Expression and evaporation.	Soft Ext.	25 in 1.	¼ to 1 gr.
Hyoscyami Viride. Green Extract Henbane.	Fresh leaves, flowering tops and young branches.	Expression and evaporation.	Soft Ext.	20 in 1.	2 to 8 gr.
Group (b). Those Containing no Chlorophyll, from Underground Portions of Plants, as Corms and Roots.—Two.					
Colchici. Extract Colchicum.	Fresh corms.	Expression and evaporation.	Soft Ext.	5 in 1.	¼ to 1 gr.
Taraxaci. Extract Dandelion.	Fresh root.	Expression and evaporation.	Soft Ext.	12 in 1.	5 to 15 gr.

Class II. Aqueous or Watery Extracts.—Seven.

Group (a). Those made with Hot Water.—Two.

Aloes Barbadensis Extract Barbadoes Aloes.	Barbadoes aloes in small fragments.	Infusion and evaporation.	Dry Ext.	Boiling water.	1 to 4 gr.
Anthemidis Extract Chamomile.	Flowers and oil of chamomile (added at end of process).	Decoction and evaporation.	Soft Ext.	Boiling water.	2 to 8 gr.

Group (b). Those made with Cold Water.—Five.

Cascaræ Sagradæ Extract Cascara Sagrada. Extractum Rhamni Purshianæ.	Bark, 20 powder.	Percolation and evaporation.	Dry Ext.	Water.	2 to 8 gr.
Gentianæ Extract Gentian.	Gentian Root.	Cold Infusion, decoction and evaporation.	Soft Ext.	Water.	2 to 8 gr.
Glycyrrhizæ Extract Liquorice.	Root, 20 powder.	Maceration and evaporation.	Soft Ext.	Cold water.	*Ad libitum.*
Opii Extract Opium.	Opium, sliced.	Maceration, evaporation and standardization.	Evap. to 50 p.c. weight of opium.	Cold water. 20 p.c. morphine	¼ to 1 gr.
Krameriæ Extract Rhatany.	Root, coarse powder.	Maceration.	Dry Ext.	Water.	5 to 15 gr.

Class III. Alcoholic Extracts.—Eleven.

Group (a). Those made by Evaporation of Standardized Liquid Extracts.—Two.

Belladonnæ Alcoholicum Alcoholic Ext. Belladonna.	Liquid Extract Belladonna and milk sugar.	Evaporation and standardization.	Pilular.	Alcohol 90 p.c. 7 Water 1 1 p.c. alkaloids.	¼ to 1 gr.
Nucis Vomicæ Extract Nux Vomica.	Liquid Extract Nux Vomica and milk sugar.	Distillation, evaporation and standardization.	Firm ext.	Alcohol 70 p.c. 5 p.c. strychnine	¼ to 1 gr.

Group (b). Those made by Percolation or Maceration.—Eight.

Cannabis Indicæ Extract Indian Hemp.	Coarse powder.	Percolation and evaporation.	Soft ext.	Alc. 90 p.c.	¼ to 1 gr.
Physostigmatis Extract Calabar Bean.	Calabar Beans, 40 powder, and milk sugar.	Percolation and standardization.	Firm ext.	Alc. 90 p.c.	¼ to 1 gr.

EXTRACTA—*Continued.*

Names and Synonyms.	Ingredients.	Process.	Consistence.	Strength, Menstruum.	Dose.
Extractum:					
Stramonii Extract Stramonium.	Seeds, 30 powder.	Percolation and evaporation.	Firm ext.	Alc. 70 p.c.	¼ to 1 gr.
Colocynthidis Composita Comp. Extract Colocynth.	Colocynth pulp, ext. Barb. aloes, resin scammony, curd soap, and powd. cardamoms.	Maceration, distillation and evaporation.	Firm ext.	Alc. 60 p.c.	2 to 8 gr.
Euonymi Siccum Dry Extract Euonymus. Dry Extract Wahoo. (Euonymin.) (?)	Root-bark—20 powder and calcium phospbate.	Percolation and evaporation.	Dry powd.	Alc. 45 p.c.	1 to 2 gr.
Rhei Extract Rhubarb.	Root, 20 powder.	Percolation and evaporation.	Dry ext.	Alc. 60 p.c.	2 to 8 gr.
Ergotæ Extract Ergot. Ergotin.	Ergot, 40 powder, diluted hydrochloric acid, sodium carbonate and water.	Percolation, evaporation, etc.	Soft ext.	Alc. 60 p.c.	2 to 8 gr.
Strophanthi Extract Strophanthus.	Seeds—30 powder, and milk sugar, purified ether (to remove fixed oils).	Percolation, evaporation and standardization.	Powder.	Alc. 90 p.c.	¼ to 1 gr.

Group (c). Hydro-Alcoholic Extract, made by consecutive action of Alcohol and Water.—One.

Jalapæ Extract Jalap.	Tubercles, coarse powd.	Maceration.	Firm ext.	Alc. 90 p.c. and water.	2 to 8 gr.

LAMELLÆ. DISCS.

The official discs are composed of a glycerin-gelatin basis, with alkaloidal medicaments. Used almost exclusively in ophthalmic practice for desired effect upon the pupil or conjunctiva.

PREPARATION.—Made by pouring a warm concentrated solution of medicated gelatin containing glycerin, upon a polished and perfectly level surface; the sheet obtained on cooling, is divided into small squares, each of which should be 1-25th inch in thickness and weigh about 1-50th grain—excepting Cocaine Discs, which should weigh 1-30th grain.

Four Official Discs.

Lamellæ Atropinæ. Discs of Atropine. 1-5000th grain (0·013 *m.gm.*) Atropine Sulphate in each disc. Mydriatic.

Lamellæ Cocainæ. Discs of Cocaine. 1-50th grain (1·3 *m.gm.*) Cocaine Hydrochloride in each disc. Mydriatic and anæsthetic.

Lamellæ Homatropinæ. Discs of Homatropine. 1-100th grain (0·65 *m.gm.*) Homatropine Hydrobromide in each disc. Prompt mydriatic.

Lamellæ Physostigminæ. Discs of Physostigmine. 1-1000th grain (0·065 *m. gm.*) Physostigmine Sulphate in each disc. Myotic.

OLEATA. OLEATES.

True oleates are semi-solid or solid, acid or normal, chemical combinations of oleic acid with metallic or alkaloidal bases.

PREPARATION.—1. By triturating freshly precipitated, well-dried metallic oxides, or free alkaloids—*not their salts*—with an excess of oleic acid, avoiding heat if possible, as metallic oxides are easily reduced to their metals, and then precipitate from solution (owing to the reducing properties of oleic acid). Oleates prepared by this method are really acid salts of oleic acid, or simply solutions of oleates in a large excess of oleic acid.

2. By interaction between solutions of an alkali oleate and metallic salts. For this purpose, Sodium Oleate may be prepared by warming 100 parts of oleic acid to 60°C., and then adding a solution of 16 parts of sodium hydroxide in alcohol, 30 parts, and water, 90 parts, until the mixture is neutral. The resulting soap (sodium oleate) is dissolved in 2,000 parts water when desired for use.

Hard soap (white castile soap) is used in the official processes instead of pure sodium oleate, and, as hard soap is an oleo-palmitate of sodium, the product obtained by its decomposition with a metallic salt will be an *oleo-palmitate*.

USES.—Oleates are used in dermal medication, and are applied either directly or in the form of ointments, their action being influenced by the readiness with which olcic acid solutions are deeply absorbed wben applied to the skin. On account of the fact that alkaloidal salts are insoluble in the usual ointment bases, olcic acid is used in each of the official alkaloidal ointments, the pure alkaloids being converted into acid oleates, whicb are soluble in, and may be readily incorporated with, the ointment bases. On analogous grounds, a similar practice should be pursued in preparing suppositorics containing alkaloids.

Two Official Oleates.

Hydrargyri Oleas. Mercuric Oleate. Made by the interaction between solutions of mercuric chloride and hard soap (sodium oleo-palmitate), a little oleic acid being added to ensure the neutralization of the excess of alkali in the soap. Composition: mainly $(C_{17}H_{33}COO)_2Hg.$, representing 28·4 per ccnt. of mercuric oxide.

Zinci Oleas. Zinc Oleate. Official in the form of olntment only, for which purpose it is prepared by the interaction between solutions of zinc sulphate and hard soap. Composition: mainly $(C_{17}H_{33}COO)_2Zn.$, represeoting 12·9 per cent. of zinc oxide.

Emplastrum Plumbi, is a solid Lead Oleate (lead soap).
Composition: mainly $(C_{17}H_{33}COO)_2Pb.$

Linimentum Calcis, contains Calcium Oleate $(C_{17}H_{33}COO)_2Ca.$

All the alkaloidal ointments contain alkaloidal oleates, made by triturating the free alkaloids with oleic acid, and gently warming the mixture, until dissolved.

PILULÆ. PILLS (MASSÆ PILULARUM. PILL MASSES).

Medicated solid plastic masses, intended to be kept in bulk, and as occasion demands, formed into spherical, ovoid or lenticular bodies, to be swallowed without being previously masticated.

COMPOSITION.—The constituents of pill masses comprise two classes of substances, viz.: the *medicament*, and the substance used to give the mass its proper adhesivencss, called the *excipient*.

EXCIPIENTS.—In the official masses, Soap, Confection of Roses, Gums Acacia and Tragacanth, and *Syrup of Glucose* are employed in most cases. The most satisfactory excipient, however, for general, all-round use, is pure, syrupy Glucose, diluted with about 20 per cent. of Glycerin.

CHARACTERISTICS.—Model pill masses should combine solubility, plasticity, adhesiveness and firmness.

Coating Not. off.

is to cover taste odour & both also to improve appearance thus avoiding permanency

Guilding & silvering.

Pills must be hard & smooth & perfectly spherical. To cover with thin film of Gum Mucilage, or syr of Acacia by rotating in a sphere (1 dry to 1 dry Pills) add dry (1 to 1 dry Pills) & Rotate in another Cup (vigorously) remove excess of both & revolve by themselves.

Pills which cannot be guilded or silvered as Asafoetida or sulphur or sulphides as Cod become black unless this is previously (varnished by Ether & col of Tolu) also pills of Hg (metal)

Varnish Pill containing especially oxidizable constituents as O. Phosphide. ferrous Iodid & Bromid

a. diagnosis - Color.

(Ether sol of Tolu is Red (Old Tolu)
" " Mastic used contain } no
" " Sandrack " " } or Green

Place pills in covered pot - & wet with varnish rotate. pour on pill tile & dry turning slightly.

Sugar Coat - not easy mode

Pearl coating -

Dampen by rotat + syrup acacia to slight Moisture then, then rotate with French Chalk as coat remove + rotate a little saccharine added or small bits of wax

xxx Gelatine Coating

Transparent Coat :. natural color seen coating is a very soluble one

The Gelatin is accomp on a large scale

Sol.

Gold label Glat. 2½ oz

Oil of Rose 120 gtt

mucilage acacia 2½ oz

aq Dest 7½ oz

Macerate Gelatin + H2O till soft. Then dissolve in water bath, add acid then slowly add Mucilage acacia + strain (if solidifies on cooling rise bet 72 - 82°C dont dig in fourth

Emetic Pills (for intestine only)

Salol + Keratin

Salol is melted & Pill dipped (needles) Coating hardens quickly fill needle hole by Camel hair brush.

& Keratin forms Horns sol in NH3

DOSES.—The official masses are in most cases constructed with a view to their subdivision into 4-grain pills, the dose being indicated as 4 to 8 grains, with but few exceptions. The dose of Pilula Phosphori is 1 to 2 grains; of Pilula Saponis Comp., and Pilula Plumbi cum Opio, 2 to 4 grains; and of Pilula Ferri, 5 to 15 grains.

USE OF OILS.—Several of the masses contain volatile oils, which are added with a view to correcting the griping tendencies of the purgative, or to relieving flatulence; at the same time they also impart a characteristic odor, thus enabling one to identify the pill. Hence we might recognize pill of Barbadoes Aloes by its odor of *Caraway;* pill of Socotrine Aloes, by its smell of *Nutmegs;* compound pill of Rhubarb, by its indication of *Peppermint;* compound Colocynth pill, by its suggestion of *Cloves;* compound pill of Gamboge, by its intimation of *Cinnamon* and *Cardamom*, etc.

CONSPERGATIVE.—Pills are usually rolled in, and surrounded by, a powder, intended to prevent their adhesion to each other and to the container, but a properly made pill seldom requires such treatment, and conspergatives should therefore be avoided, except when *absolutely necessary*.

Powders used for this purpose, are: Starch, Althæa, Lycopodium, Wheaten Flour, Liquorice, Talcum, French Chalk, etc.

PILL-COATING.—The B. P. does not direct that any of the official pills shall be coated, but the appearance, stability and preservation of some may be wonderfully increased, and their unpleasant taste masked, by coating with gelatin, sugar, gold- or silver-leaf, tolu balsam, or mastic.

When it is desired to localize the action of certain medicinal agents to the intestinal tract, the pill should receive a coating that will resist the action of the acid gastric juice, and therefore pass through the stomach undissolved, into the duodenum, where the alkaline secretion causes the solution of the coating, followed by the disintegration of the pill.

Keratin and Salol are the agents employed for this purpose, and pills treated in this manner are known as Enteric Pills.

UNOFFICIAL.—Compound Cathartic Pills. Each pill contains: Compound Extract Colocynth, ⅓ gr.; Extract Jalap, 1 gr.; Calomel, 1 gr., and Gamboge ¼ gr. Dose: 1 to 3 pills.

Improved Compound Cathartic Pills. Vegetable Cathartic Pills. Each pill contains: Compound Extract Colocynth, 1 gr.; Extract Jalap, ½ gr.; Podophyllin, ¼ gr.; Extract Gentian, ½ gr.; Leptandrin, ¼ gr.; Extract Hyoscyamus, ¼ gr., and Oil Peppermint. Dose: 1 to 3 pills.

Pilula Aloes et Mastiche. Lady Webster's Dinner Pill. Pil. Ante Cibum. Each pill contains: Socotrine Aloes, 2 gr.; Mastich, ¾ gr.; flavored with powdered Red Rose. Dose: 1 to 3 pills.

PILULÆ.

Twenty Official Pill Masses.

Names and Synonyms.	Ingredients.	Strength.	Dose.
I. Containing Aloes.—Nine.			
Pilulæ:			
Aloes Barbadensis Pill Barbadoes Aloes.	Barb. aloes, hard soap, oil caraway, and confection of roses.	1 in 2, nearly.	4 to 8 gr.
Aloes et Asafetidæ Pill Aloes and Asafetida.	Soc. aloes, asafetida, hard soap, and confection of roses.	1 aloes and 1 asafet. in 4.	4 to 8 gr.
Aloes et Ferri Pill Aloes and Iron.	Dried ferrous sulph., Barb. aloes, comp. po. cinnam., and syrup of glucose.	1 $FeSo_4$, dried, and 1 aloes in 3.	4 to 8 gr.
Aloes et Myrrhæ Pill Aloes and Myrrh. Rufus' Pill.	Soc. aloes, myrrh, and syrup of glucose.	2 aloes and 1 myrrh in 4½.	4 to 8 gr.
Aloes Socotrinæ Pill Socotrine Aloes.	Soc. aloes, hard soap, oil nutmegs, and confection of roses.	1 in 2, nearly.	4 to 8 gr.
Cambogiæ Composita Comp. Pill Gamboge.	Gamboge, Barb. aloes, comp. po. cinnamon, hard soap and syr. glucose.	1 gamb. and 1 aloes in 6.	4 to 8 gr.
Colocynthidis Compos. Comp. Pill Colocynth.	Colocynth pulp, Barb. aloes, resin scammony, potass. sulphate, oil of cloves and water.	2 Res. scam. 1 coloc. and 2 aloes in 6.	4 to 8 gr.
Colocynthidis et Hyoscyami Pill Coloc. and Henbane.	Compound pill colocynth and extract henbane.	Pill Col. 2 and Ext. H. 1 in 3.	4 to 8 gr.
Rhei Composita Compound Rhubarb Pill.	Rhubarb, Soc. aloes, soap, myrrh, oil peppermint, and syrup of glucose.	3 rheum and 2¼ aloes in 11	4 to 8 gr.
II. Containing Other Plant-Drug Bases.—Five.			
Galbani Composita Comp. Pill Galbanum. Comp. Pill Asafetida.	Asafetida, myrrh, galbanum and syrup of glucose.	2 asafet. and 2 galb. in 7.	4 to 8 gr.
Ipecacuanhæ c̄ Scilla Pill Ipecac. with Squill.	Compound powd. Ipecac., squill, ammoniacum and syrup of glucose.	3 Dov. powd. to 6. 5 p.c. opium.	4 to 8 gr.
Saponis Composita Compound Pill of Soap. Pill of Oplum.	Powdered oplum, soap and syrup of glucose.	1 oplum to 5.	2 to 4 gr.
Scammonii Composita Comp. Scammony Pill.	Resins of scammony and jalap, curd soap, and tincture ginger.	1 R. scam. and 1 R. jalap in 3½.	4 to 8 gr.
Scillæ Composita Compound Pill Squill.	Squill, ginger, ammoniac., soap and syrup glucose.	1 squill in 4, nearly.	4 to 8 gr.

Y acetic ac applied as before
or Varnishing by brush

PILULÆ—*Continued.*

Names and Synonyms.	Ingredients.	Strength.	Dose.
111. Containing Inorganic Salts or Elements as Bases.—Five.			
Ferri Iron Pill. Blaud's Pill.	Dried sulphate iron, dried sodium carb., acacia, syrup, tragac., glycerin and water.	1 $FeCO_3$ in 5.	5 to 15 gr.
Hydrargyri Mercury Pill. Blue Pill.	Mercury, confection roses and liquorice root.	1 in 3.	4 to 8 gr.
Hydrargyri Subchloridi Composita Comp. Pill Subchlor. Mercury. Pill. Calomelanos Composita. Compound Pill Antimony. Plummer's Pill.	Mercurous chloride, sulphurated antimony, guaiac resin, castor oil and alcohol 90 p.c.	1 Hg_2Cl_2 1 Sb_2S_3 and 2 resin guaiac in 4½.	4 to 8 gr.
Phosphori Phosphorus Pill.	Phosphorus, lard, kaolin, white wax, acacia and CS_2.	1-10 gr. P. in 5 grs.	1 to 2 gr.
Plumbi cum Opio Pill Lead and Opium.	Lead acetate, opium and syrup of glucose.	6 PbAc. and 1 opium in 8, nearly.	2 to 4 gr.
IV. Containing an Alkaloidal Salt.—One.			
Quininæ Sulphatis Pill Quinine Sulphate.	Quin. sulph., tartaric acid, glycerin and tragacanth.	5 in 6.	2 to 8 gr.

PULVERES. POWDERS.

Uniform mixtures of finely comminuted medicinal substances.

Preparation.—The ordinary means of mixing are not sufficiently effective to produce the degree of uniformity desired in this class of official preparations.

A satisfactory product may be obtained by the use of powders in the finest state of subdivision obtainable,—so-called "dusted powders"—and effecting their combination by trituration in a mortar, followed by sifting and then lightly triturating again, to mix the particles which have arranged themselves according to their degrees of fineness during sifting.

When powders are to be made that contain aromatic drugs representing essential oils, or drugs having other volatile medicinal constituents, such drugs should not be used in the form of dusted powders, as the extent of desiccation required to enable the production of so fine a powder, causes a loss of medicinal principles.

Dispensing.—If a single dose is ordered, the weighed quantity is folded in paper and enclosed in a suitable envelope; if several doses are

to be dispensed, the quantity intended for each individual dose is to be weighed out separately, folded in paper, and the several papers enclosed in a suitable slide box, or covered box. When the powder contains a deliquescent or volatile ingredient, it should be first folded in wax-paper, before folding in the ordinary powder paper.

If the powder is to be dispensed in bulk, and the doses to be apportioned by the nurse or patient, it should be dispeosed in a round paper box or wide-mouth bottle, the latter especially, if the ingredients contain hygroscopic or volatile constituents, and it will also be found convenient for traveling purposes.

ADMINISTRATION.—In order to overcome the aversion of the patient for powders containing bitter, nauseous or otherwise unpleasantly tasting medicines, various pharmaceutical devices have been introduced in recent years, for the purpose of enclosing drugs in soluble cases made of gelatin or rice-flour, known as capsules, cachets, "konseals," granules, etc.

Wheo so directed by the practitioner, powders and other drugs of the Pharmacopœia may be dispensed in such non-official forms.

UNOFFICIAL.—Certain combinations, not now official, are frequently dispensed under the following officinal names:

Pulvis Aloes et Canellæ. Hiera Picra, Contains Aloes 4, Canella 1. Dose: 2 to 5 grains.

Pulvis Morphinæ Compos. Tully's Powder. Contains Morpbine Sulph., 1 in 61, made up of Camphor, Liquorice and Precipitated Chalk, 20 parts each. Dose: 5 to 15 grains.

PULVERES.

Seventeen Official Powders.

NAMES AND SYNONYMS.	INGREDIENTS.	STRENGTH.	DOSE.
I. POWDERS CONTAINING OPIUM.—FOUR.			
Pulvis:			
Cretæ Aromat. cum Opio Aromatic Chalk Powder with Opium.	Aromatic chalk powder and powdered opium.	1 opium in 40.	10 to 40 gr.
Ipecacuanhæ Compos. Compound Powder Ipecac. Dover's Powder.	Ipecac., opium and potassium sulphate.	1 ipecac, 1 opium } in 6.	5 to 15 gr.
Kino Compositus Compound Powder Kino.	Kino, opium and cinnamon bark.	1 opium, 15 kino } in 20.	5 to 20 gr.
Opii Compositus Compound Powder Opium.	Opium, black pepper, ginger, caraway, tragacanth.	1 in 10.	2 to 10 gr.

PULVERES—*Continued.*

Names and Synonyms.	Ingredients.	Strength.	Dose.
II. Purgative Powders.—Six.			
Elaterini Compositus Comp. Powder Elaterin.	Elaterin and milk sugar.	1 in 40.	1 to 4 gr.
Glycyrrhizæ Compositus Comp. Powder Liquorice. Brown Powder.	Senna, liquorice, fennel, sub. sulphur and sugar.	1 senna in 6.	60 to 120 gr.
Hydrargyrum cum Creta Mercury with Chalk. Grey Powder.	Mercury and prepared chalk.	1 in 3.	1 to 5 gr.
Jalapæ Compositus Compound Powder Jalap. Cathartic Powder. Pulvis Purgans.	Jalap, potassium acid tartrate and ginger.	1 in 3.	20 to 60 gr.
Rhei Compositus Compound Powder Rhubarb. Gregory's Powder.	Rhubarb, light or heavy magnesia and ginger.	1 in 4½.	20 to 60 gr.
Scammonii Compositus Comp. Powder Scammony.	Resin scammony, jalap and ginger.	1 R. scam. and ¾ R. jalap in 2.	10 to 20 gr.
III. Astringent Powders.—Two.			
Catechu Compositus Comp. Powder Catechu.	Catechu, kino, rhatany, cinnamon and nutmeg.	1 in 2½.	10 to 40 gr.
Cinnamomi Compositus Comp. Powder Cinoamon. Pulvis Aromaticus.	Cinnamon, cardamom and ginger.	1 in 3.	10 to 40 gr.
IV. Flavoring and Demulcent Powders.—Two.			
Amygdalæ Compositus Comp. Powder Almonds. Confection of Almonds.	Blanched sweet almonds, sugar and acacia.	1 in 1½.	(1 to 2 drs.)
Tragacanthæ Compos. Comp. Powder Tragacanth.	Tragacanth, acacia, starch and sugar.	1 in 6.	20 to 60 gr.
V. Powders Containing Metallic Salt Bases.—Two.			
Antimonialis Antimonial Powder. James' Powder. Pulvis Jacobi.	Antimonious oxide and calcium phosphate.	1 in 3.	3 to 6 gr.
Cretæ Aromaticus Aromatic Powder Chalk. Confectio Aromatica.	Cardamom, sugar, cinnamon, prepared chalk, nutmeg and cloves.	1 in 4½	10 to 60 gr.
VI. Effervescent Powder.—One.			
Sodæ Tart. Effervescens Effervescent Tartarated Soda Powder. Seidlitz Powder.	Tartarated soda and soda bicarb. In *blue* paper. Tartaric acid in *white* paper.	120 grs. tartarated soda in each blue paper.	*Ad libitum.*

RESINÆ. RESINS.

Solid preparations, wholly insoluble in water, obtained from plant-drugs by natural or aided exudation, or by distillation of oil from oleo-resins, or by precipitation of concentrated alcoholic solutions by the agency of water.

They differ from alcoholic extracts, since they represent those principles only, which are soluble in alcohol and insoluble in water, while *Extracts* contain all the principles which are soluble in alcohol.

Natural Resins constitute the class obtained by natural exudation, or after incision or the application of heat; while resins resulting from the precipitation of alcoholic solutions, or obtained as a residue remaining after distilling volatile oils from oleo-resins, constitute the Derived Resins.

The precipitation method implies the exhaustion of the drug with rectified spirit by digestion or percolation or both combined, then distilling to a syrupy consistence and subsequently pouring the liquid into a large volume of cold water under constant stirring; the resin deposits on standing, is washed repeatedly with cold water, collected, drained and dried, while the extractive remains in solution in the aqueous liquid.

In preparing Podophyllum Resin, the concentrated percolate is poured into water containing about four per cent. of *Hydrochloric Acid*, for the purpose of hastening the deposition of the resin.

RESINÆ.

Six Official Resins, two natural, four derived.

Names and Synonyms.	Sources.	Process.	Dose.
Guaiaci Resina Guaiacum Resin.	Stems of *Guaiacum officinale* and *sanctum*.	Exudation.	5 to 15 grs.
Jalapæ Resina Jalap Resin.	Tubercles of *Ipomœa purga*.	Dig., perc. and precipitation.	2 to 5 grs.
Pix Burgundica Burgundy Pitch.	Stems of *Picea excelsa*.	Exudation.	Externally.
Podophylli Resina Podophyllum Resin.	Rhizome of *Podophyllum peltatum*.	Perc., dist. and precipitation.	¼ to 1 gr.
Resina Resin. Colophony.	Crude oleo-resin of various species of *Pinus*.	Distillation.	Externally.
Scammoniæ Resina Resin Scammony.	Root of *Convolvulus Scammonia*.	Perc., dist. and precipitation.	3 to 8 grs.

SALES EFFERVESCENTES.
EFFERVESCENT SALTS.

Solid substances in granular or powdered form, which dissolve when brought into contact with water, with brisk effervescence.

Many bitter and otherwise unpleasant substances may, when prepared in the form of Effervescent Salts, be administered as palatable, cooling, effervescing draughts, on dissolving in water, the pungency of the dissolved and escaping carbonic oxide serving to mask the disagreeable taste of the medicating agent.

COMPOSITION.—These salts are all prepared on the same general plan, being composed of:—the Medicinal Agents; the Effervescent Agents and the Flavoring Agents.

THE MEDICINAL AGENTS.—Those represented in the official compounds, are the saline substances indicated in the specific titles of the several effervescent preparations, viz.: Caffeine Citrate, Lithium Citrate, Magnesium Sulphate, Sodium Sulphate, Sodium Phosphate, Sodium Citro-Tartrate, and Sodium and Potassium Tartrate. Many other medicinal substances may be exhibited in granular effervescent form, *e.g.* Pepsin, Citrate Iron and Quinine, Sodium Salicylate, Caffeine Hydrobromide, Cerium and Bismuth Compounds, as well as salines representing the main constituents of the popular mineral springs. If the medicinal substance contains much water of crystallization, it should be rendered partially or wholly anhydrous by desiccation, before admixture with the other ingredients.

THE EFFERVESCENT AGENTS.—These are represented by Sodium Bicarbonate combined with Citric or Tartaric Acid. If a granular salt is to be made, Citric Acid is generally selected, since the resulting granules are firmer and will keep better; as a rule, a mixture of the two acids is preferred.

When the effervescent compound is dissolved in water, the acids decompose the alkali-bicarbonate, with copious evolution of carbonic oxide. When formulæ are to be devised for special combinations, in order to regulate the reaction of the dissolved product, as to whether it shall be acid, neutral or alkaline, it should be borne in mind, that, 20 grains Sodium Bicarbonate will saturate 17·8 grains Tartaric Acid or 16·7 grains of Citric Acid, and the quantity of acid or alkali to be used may be calculated from this statement.

THE FLAVORING AGENTS.—Powder Refined Sugar is in most cases employed for this purpose, or the Sugar may be further flavored, when so desired, with Spirits of Orange or Lemon, or Alcoholic Tincture Celery Seed, etc.

GRANULATION.—The several ingredients in fine powder, should be uniformly mixed without much pressure, and may then be granulated by either of the following methods. Any fine particles should be removed from the finished product by shaking in a 20 to 30-mesh sieve.

THE ALCOHOL PROCESS.—The powder is dampened with Commercial Alcohol (94 p.c. by volume), to a stiff paste, which is then to be rubbed through a well tinned 6 or 8-mesh sieve with the hand. The resulting granules are dried by exposure to dry air, or in a suitable drying-closet having a temperature not exceeding 130° F. (54·4° C.).

THE HEAT PROCESS.—*The Official Process.*—The mixture is placed in a pan or dish which has been previously heated to 200° to 220° F. (93·5° to 104·5° C.), and the heat continued until semi-fusion has just commenced, when the pasty mass is to be quickly stirred to form granules, which are subsequently dried in a closet at 130° F. (54·4° C.).

PRESERVATION.—Effervescent Salts should be kept in well stoppered bottles, as they readily attract moisture from the atmosphere, and then rapidly deteriorate.

There are six official effervescent compounds in the form of *granules*, and one in the form of *powder*. All contain sodium bicarbonate, tartaric and citric acids, excepting Pulvis Sodæ Tartaratæ Effervescens, which contains no citric acid.

SALES EFFERVESCENTES.

Seven Official Effervescent Salts.

NAMES AND SYNONYMS.	CHIEF INGREDIENT. REMARKS.	STRENGTH.	DOSE.
Effervescens:			
Caffeinæ Citras Efferves. Caffeine Citrate.	Caffeine citrate. Contains sugar.	1 in 25.	60 to 120 gr.
Lithii Citras Efferves. Lithium Citrate.	Lithium citrate. Contains no sugar.	1 in 20.	60 to 120 gr.
Magnesii Sulphas Eff. Magnesium Sulphate. Efferves. Epsom Salt.	Magnesium sulphate. Contains sugar.	1 in 2.	60 to 240 gr. 1-2 to 1 oz.
Sodii Citro-Tartras Eff. Sodium Citro-Tartrate.	Sodium bicarb., citric and tartaric acids. Contains sugar.		*Ad libitum.*
Sodii Phosphas Eff. Sodium Phosphate.	Sodium phosphate. Contains no sugar.	1 in 2.	60 to 120 gr. 1-4 to 1-2 oz.
Sodii Sulphas Efferves. Sodium Sulphate. Efferves. Glauber's Salt.	Sodium sulphate. Contains no sugar.	1 in 2.	60 to 120 gr. 1-4 to 1-2 oz.
Pulvis Sodæ Tartaratæ Eff. Tartarated Soda Powd. Eff. Rochelle Salt. Seidlitz Powder.	Rochelle salt and sodium bicarb. in blue paper; Tart. acid in white paper. Contains no sugar.	120 grs. tartarated soda in each powder.	(1 to 3 of each powder).

Advantages.

Slow & uniform elimination & absorbtion of medicating ingredients when the direct application of agent might be irritant.

SUPPOSITORIA. SUPPOSITORIES.

Solid medicinal preparations of cylindrical, conical or globular form, to be introduced into the rectum, urethra or vagina, and of such a consistence that they will melt at the temperature of the body, or liquefy in the presence of moisture.

BASES.—The bases employed in making suppositories are oil of theobroma (cacao butter) or glycerin-gelatin; the former is the one used in most cases, on account of its low-fusing point—88 to 93°F. (31·1 to 33·9°C.)—and its bland, non-irritant properties. White Beeswax is combined with cacao butter in Suppos. Acidi Carbolici, as a simple cacao-butter base would furnish a rather soft mass. In fact, more or less white beeswax, according to prevailing temperatures, may be used in place of an equal quantity of cacao butter in India and the colonies, when otherwise the suppositories of the Text of the Pharmacopœia would be too soft for convenient use.

EXCIPIENT.—Cacao butter frequently "masses" with difficulty, especially if it is to be combined with dry powders or extracts; in such cases the presence of a small quantity of an adhesive, firm, fatty excipient is indicated, for which purpose Adeps Lanæ Hydrosus, so-called "Lanolin," is recommended. Glycerin is often employed, but cannot be called a satisfactory excipient.

SHAPES AND SIZES.—Suppositories (rectal suppositories), should be about 7-8ths inch in length, and represent the bulk of 15 to 16 grains of cacao-butter, and should be of a rounded conical form, the outline being represented by two convex surfaces; rarely ordered to weigh 30 grains.

PESSARIES (vaginal suppositories), differ from rectal suppositories only in size and weight; their weight should be about 60 grains, rarely 120 grains; they are occasionally globular in form.

BOUGIES (urethral suppositories), should weigh 15 to 30 grains; length 2½ inches or more, diameter about 1-5 inch; in shape, a cylindrical pipe with one end rounded.

PREPARATION.—Suppositories are rolled by hand, or cast in moulds previously cooled on ice or in iced-water, the interior of the moulds having been dusted with lycopodium, or pencilled with glycerin or soap liniment in order to prevent the suppository from adhering to it: also made by cold compression, which is the most satisfactory process for nearly every case, furnishing suppositories with facility and despatch, that are attractive in appearance and elegant in finish, and accurate, perfect and uniform in size

and shape; features that are usually conspicuous by their absence in suppositories made by other methods. Glycerin suppositories may be made of various sizes—30, 60, or 120 grains in weight, as desired.

SUPPOSITORIA.

Seven Official Suppositories.

Names and Synonyms.	Bases.	Strength.
Suppositoria:		*Each contains:*
Acidi Carbolici Carbolic Acid Suppositories. Phenol Suppositories.	Cacao butter and white beeswax.	1 grain.
Acidi Tannici Tannic Acid Suppositories.	Cacao butter.	3 grains.
Belladonnæ Belladonna Suppositories.	Cacao butter.	1 1-2 grs. alc. ext. bellad., or 1-60 gr. alkaloids.
Glycerini Glycerin Suppositories. Gelatin Suppositories.	Gelatin.	70 per cent. glycerin.
Iodoformi Iodoform Suppositories.	Cacao butter.	3 grains.
Morphinæ Morphine Suppositories.	Cacao butter.	1-4th grain morphine hydrochloride.
Plumbi Composita Comp. Lead Suppositories.	Cacao butter.	3 grs. lead acetate and 1 grain opium.

TABELLÆ. TABLETS.

Small lozenges of chocolate with some medicament, each weighing five grains (0·325).

One Official Tablet.

Tabellæ Trinitrini. Trinitrin Tablets. Glonoin Tablets. Tablets of Nitroglycerin. Each tablet contains 1-100th grain (0·00065 gram) of trinitroglycerin, $C_3H_5(NO_3)_3$, of commerce, and weighs five grains. Dose: One or two tablets.

Tablets
small disc like masses of med P. + suitable vehicles.
Specially adapted to admixture of strong drugs (morph, Strych, Narcotine, Calo, Cocaine)
They dissolve or disintegrate readily
They have no adhesive paste
Vehicle is generally milk sugar sometimes
milk sugar & Cane sugar
or Cane sugar only
in exposure to Alkalis & H_2O used
Org Infusion made in 2 ways
I if a dry solid it is trit + milk sugar till very fine then passed thro a 120 meshed sieve if med is a paste or big mass with milk & sugar dry at low temp & trit + remainder 2 milk sugar to fine powd & sieve 120
Tablet from pp to pasty mass by a suitable excipient - then moulded to tablet suitable size & wt: when milk sugar is dil H_2O is used as excipient - generally but if Cane & Milk then a little Alc except is used on acc of solubl of Cane sugar in H_2O. The proport of Alc being increased is proport of Cane Sugar is increased (5 - 1) (12 - 1)
Good combination

Imp weigh out enough of Medcat
to make 50 ℈ J

& Mix with small quant of dil Brown
to be sufficient, moisten & Press
to give no of moulds, which it will
hardly fills. Then moisten more of dilnent-
+ excipient & force it into moulds till
filled dry britisle & weigh subtract
weight of medication & diff represents
wt of dil required in similar Case

Compressed tablets, drugs must be
coarsely granular

TROCHISCI. TROCHES (LOZENGES).

Mixtures of medicinal substances with sugar, gum acacia and a suitable flavoring agent, formed by the aid of mucilage of gum acacia and mechanical means, into flat pieces of circular, square, octagonal or other forms. Weight, about 15.5 grains (1 gram) each.

PREPARATION.—The ingredients are beaten into a plastic and adhesive mass, rolled out into thin flat sheets, divided into pieces of the desired shape by means of lozenge-cutters, and finally dried in a hot-air chamber at a moderate temperature.

BASES.—The constituents of the mass, other than the medicating agent, taken collectively, constitute the *Basis*, and five different combinations are employed in preparing the official lozenges, differing mainly as to the kind of flavoring agent selected.

THE SIMPLE BASIS contains refined sugar and gum acacia, both finely powdered, mucilage of gum acacia and distilled water. Other bases contain the same ingredients, but with the addition of a specified flavor.

FRUIT BASIS.—Contains black currant paste, softened with boiling water.

ROSE BASIS.—Has rose water, instead of distilled water.

TOLU BASIS.—Tincture of balsam of tolu is used, in connection with the usual constituents.

ORANGE BASIS.—Contains tincture of orange; is used only in preparing sulphur lozenges.

DOSES.—The doses of Lozenges are not mentioned in the B. P.—but may be considered as one to four.

TROCHISCI.

Seventeen Offi *ozenges.*

NAMES AND SYNONYMS.	CHIEF INGREDIENTS IN EACH LOZENGE.	BASES.
Trochiscus:		
Acidi Benzoici Benzoic Acid Lozenge.	Benzoic acid, one-half-grain.	Fruit.
Acidi Carbolici Carbolic Acid Lozenge. Phenol Lozenge.	Phenol, one grain.	Tolu.
Acidi Tannici Tannic Acid Lozenge.	Tannic acid, one-half grain.	Fruit.
Bismuthi Compositus Compound Bismuth Lozenge.	Bismuth carb., two grains. Magnes. carb., two grains. Ppt'd calcium carb., four grs.	Rose.

TROCHISCI—*Continued.*

Names and Synonyms.	Chief Ingredients in each Lozenge.	Bases.
Trochiscus:		
Catechu Catechu Lozenge.	Catechu, one grain.	Simple.
Eucalypti Gummi Eucalyptus Gum Lozenge.	Eucalyptus one grain.	Fruit.
Ferri Redacti Reduced Iron Lozenge.	Reduced iron, one grain.	Simple.
Guaiaci Resinæ Guaiacum Resin Lozenge.	Guaiacum resin, three grains.	Fruit.
Ipecacuanhæ Ipecacuanha Lozenge.	Ipecac. root, one-fourth grain.	Fruit.
Krameriæ Krameria Lozenge. Rhatany Lozenge.	Extract Krameria, one grain.	Fruit.
Krameriæ et Cocainæ Krameria and Cocaine Loz. Rhatany and Cocaine Loz.	Extract Krameria, one grain. Cocaine hydrochloride, one-twentieth grain.	Fruit.
Morphinæ Morphine Lozenge.	Morph. hydrochloride, one-thirty-sixth grain.	Tolu.
Morphinæ et Ipecac. Morphine and Ipecac. Loz.	Morph. hydrochloride, one-thirty-sixth grain. Ipecac. root, one-twelfth grain.	Tolu.
Potassii Chloratis Potassium Chlorate Lozenge.	Potass. chlorate, three grains.	Rose.
Santonini Santonine Lozenge.	Santonin, one grain.	Simple.
Sodii Bicarbonatis Sodium Bicarbonate Lozenge.	Sodium bicarbonate, three grs.	Rose.
Sulphuris Sulphur Lozenge.	Precip. sulphur, five grains. Potass. bitartrate, one grain.	Orange.

UNGUENTA. OINTMENTS.

Unctuous preparations of such a consistence that they may be rubbed on the skin, and gradually liquefy while in contact, or sufficiently soft to be spread upon cloth, cotton-wool or gauze at the ordinary temperature, yet firm enough to adhere to the skin without melting.

This class comprises both the preparations known in other pharmacopœias as *Cerata* (Cerates), unctuous preparations which melt above the normal temperature of the human body, and those termed *Unguenta* (Ointments), which melt at or below 99°F.

PREPARATION.—The pharmaceutical processes involved in the preparation of the official ointments are: trituration (incorporation), fusion, and chemical action with fusion.

It is highly important that a suitable base be employed, and that it be absolutely free from rancidity, as well as that the medicating material be of suitable character. It is therefore necessary in preparing ointments, that due consideration be given to the intelligent selection of the base, having due regard for the object of its use, as to whether the ointment is designed for mere superficial action, or intended to produce a local or general effect through the *absorption* of its medicinal ingredients.

Many substances, such as mercury, iodine, the alkaloids, etc., can be made to produce their effects upon the system when applied in the form of ointment, quite as effectually as when taken *per ora*, hence ointments required for such purposes, should be prepared with bases that readily and deeply penetrate the tissues.

BASES.—The official bases are: lard, benzoated lard, soft paraffin, hydrous wool-fat, almond and olive oils. Beeswax, indurated (hardened) lard, hard paraffin and spermaceti are frequently employed in conjunction with the bases just mentioned, in order to raise the melting-point of the product, or when the base is of itself too soft for practical use.

A classification of important official ointment bases follows:

OINTMENT BASES.

NAMES AND SYNONYMS.	SOURCE, ETC.	PROCESS.	REMARKS.
HAVING LOWER MELTING POINTS.			
Adeps Purified Lard. Adeps Suillus. Axungia Porcina.	Purified abdominal fat of the hog, *Sus scrofa*.	Fusion and Colation.	Melts 100°F (37·8°C.)
Adeps Benzoatus Benzoated Lard. Benzoin Ointment.	Lard and powd. benzoin.	Digestion and Colation.	Melts 100°F., (37·8°C.).

OINTMENT BASES—*Continued.*

Names and Synonyms.	Source, etc.	Process.	Remarks.
Adeps Lanæ Wool-Fat. Anhydrous Lanolin.	Purified Cholesterin-fat of sheeps wool.	Maceration with benzin or ether.	Melts 104° to 112°F. (40° to 44·4°C.)
Adeps Lanæ Hydrosus Hydrous Wool-Fat. Lanolin.	Wool-fat (7), and water (3).	Fusion and trituration.	Melts 104° to 112°F. (44° to 44·4°C.)
Oleum Amygdalæ Almond Oil. Expressed Oil Almond.	Ripe seed of bitter or sweet almond. Sp. grav. 0·915 t 0·920.	Expression.	Congeals -4°F. (20°C.).
Oleum Olivæ Olive Oil.	Ripe fruit of *Olea europæa*. Sp. grav. 0·914 to 0·919.	Expression.	Congeals 32°F.
Paraffinum Molle Soft Paraffin. Petroleum. Petrolène.	Mixed hydrocarbons, representing the less volatile portions of petroleum. Sp. grav. 0·840 to 0·870.	Fraction distillation and purification.	Melts 96° to 102°F., (35.5°to38·9°C) Non-sapon.
Having Higher Melting Points.			
Adeps Induratus Indurated Lard. Hardened Lard.	Lard, freed of some of its oil by pressure.	Expression.	Varies, according to quantity of oil removed.
Cera Alba White Wax. White Beeswax.	Yellow beeswax, bleached	Exposure to moisture, air and light.	Melts, 144·5° to 147° F. (62·5 to 63·9°C)
Cera Flava Yellow Wax. Yellow Beeswax.	Honeycomb of the Hive Bee, *Apis mellifica*. Sp. grav. 0·960 to 0·970.	Fusion and expression.	Melts, 144·5° to 147° F. (62·5 to 63·9°C)
Cetaceum Spermaceti.	Fat from head of sperm whale, *Physeter macrocephalus*.	Filtration, expression and purification.	Melts, 114·8° to 122° F. (46° to 50° C.)
Paraffinum Durum Hard Paraffin. Paraffin Wax. Solid Paraffin.	Petroleum or shale. 0·82 to 0·94.	Distillation, refrigeration and purification.	Melts, 110° to 140° F. (43·3° to 63° C.) Non-sapon.

Lard.—Ranks among the best ointment bases, being characterized by deep absorption; great affinity for liquids, thereby permitting its ready incorporation with aqueous and other fluid preparations; general firm consistence; a melting-point that approximates the body-temperature; the cheapness and readiness with which it can be purified; and the fact that it softens the skin better than other bases. Its inclination to rancidity, followed by granulation, is perhaps the sole objection to its exclusive use.

Rosolic Test -
Heat 10 gr on water bath stirring till wt is constant; it should loose no more than 3 gr wt.

BENZOATED LARD.—This compound possesses all of the desirable features of purified lard as an ointment-base, but with its tendency to rancidify somewhat lessened when properly prepared, but this can hardly be claimed for an ointment prepared by the official method.

HYDROUS WOOL-FAT.—Possesses advantages of deep absorption; a skin-softener; wonderful affinity for liquids; a firm consistence; freedom from rancidity, and a melting-point near the body-temperature,—hence is quite soft at 98·8°F., (37°C.) It is, however, objectionably adhesive *per se*, but this stickiness can be diminished by combining it with paraffin oil.

SOFT PARAFFIN.—Does not soften the skin or penetrate the tissues nearly as readily as lard or wool-fat, and hence is valued mainly as a bland, neutral, protective dressing. It does not mix with aqueous fluids. Keeps permanently, has a low melting-point, and is not acted upon by acids or alkalies.

Olive Oil, Almond Oil, Cocoanut Oil, Oleic Acid, etc., soften the skin readily and are deeply absorbed and hence are satisfactory media for promoting the administration of medicinal ingredients in the form of ointment. All the alkaloidal ointments contain oleic acid, which is combined with the free alkaloid to form an oleate, before incorporating with the base.

MELTING-POINT RAISERS.—The bases possessing the *higher* melting-points are employed when the ointment would otherwise be unduly soft or semi-fluid in consistence. Their presence yields firmer ointments in proportion to the quantity used. In India and other tropical colonies, where prevailing high temperatures render the official base too soft for convenient use, a greater quantity of the higher melting-point bases, viz. : indurated lard, prepared suet, yellow or white beeswax, may be employed, but the official proportion of active ingredient must in all cases be maintained.

INDURATED LARD can be employed with advantage in the sub-tropical climates to produce ointments of suitable consistence to withstand the softening tendencies of the heat of summer. It is prepared by subjecting lard to pressure, thereby depriving it of a portion of its oil (*olein*), furnishing a product that contains a greater proportion of the more solid fats, *palmitin* and *stearin*. In the Province of Ontario, a mixture of purified lard, three parts, and indurated lard, one part, furnishes an excellent ointment base. In India, the base should be indurated lard with no added purified lard.

HARD PARAFFIN.—Employed in combination with soft paraffin, as Paraffin Ointment, in preparing many of the official ointments. When used as a base for ointments containing white substances, the *white* variety of Soft Paraffin is used; for yellow substances, the *yellow* variety.

The ointments are here classified accerding to their bases; Lard is used in preparing 8 ointments; Benzoated Lard, 13; Soft Paraffin, 3; Hard and Soft Paraffins, 3; Paraffin Ointment, 10; Hydrous Wool-Fat, 2; Almond Oil with Spermaceti and Yellow Wax, 2; Olive Oil, 2; Yellow Wax, alone, 1.

UNGUENTA.

Forty four Official Ointments.

... AND SYNONYMS.	PROCESS.	STRENGTH.	REMARKS, CONSTITUENTS, ETC.
I. HAVING LARD (PURIFIED) FOR THEIR BASE.—EIGHT.			
Unguentum:			
Aconitinæ Aconitine Ointment.	Incorporation.	1 in 50.	Alkaloid dissolved in oleic acid.
Atropinæ Atropine Ointment.	Incorporation.	1 in 50.	Alkaloid dissolved in oleic acid.
Cocainæ Cocaine Ointment.	Incorporation.	1 in 25.	Alkaloid dissolved in oleic acid.
Hydrargyri Mercury Ointment. Blue Ointment. Troopers Ointment.	Incorporation.	1 in 2⅓. 48⅔ p.c. Hg.	Contains prepared suet.
Hydrargyri Nitratis Mercuric Nitrate Ointment. Citrine Ointment. Unguentum Citrinum.	Chemical action.	1 Hg. in 15. 1 $Hg(NO_3)_2$ in 9·5.	Contains olive oil.
Iodi Iodine Ointment.	Incorporation.	1 in 25 each iodine and potass. iodide.	Contains potassium iodide and glycerin.
Resinæ Resin Ointment. Basilicon Ointment.	Fusion.	1 in 2½.	Contains yellow wax and olive oil.
Veratrinæ Veratrine Ointment.	Incorporation.	1 in 50.	Alkaloid dissolved in oleic acid.
II. HAVING BENZOATED LARD FOR THEIR BASE.—THIRTEEN.			
Belladonnæ Belladonna Ointment.	Evaporation and Incorporation.	8 liq.ext. in 10.	Evap. liq. ext. to definite weight before incorporating.
Cantharidis Cantharides Ointment. Spanish-Fly Ointment. Unguentum Lyttæ.	Fusion and Digestion.	1 in 11.	Digest 12 hours, at 120°F. (48·9°C.)
Chrysarobini Chrysarobin Ointment.	Incorporation with Fusion.	1 in 25.	Only moderate heat should be employed.
Gallæ Gall Ointment. Nut-gall Ointment.	Incorporation.	1 in 5.	

UNGUENTA—*Continued.*

Names and Synonyms.	Process.	Strength.	Remarks, Constituents, etc.
Unguentum:			
Gallæ cum Opio Gall with Opium Ointment.	Incorporation.	7·5% opium.	Contains powdered opium.
Hydrargyri Iodidi Rubri Mercuric Iodide Ointment. Oint. Red Iodide Mercury.	Incorporation.	1 in 25.	
Hydrargyri Oleatis Mercuric Oleate Ointment.	Incorporation.	1 in 4.	Precipitated oleate used.
Hydrargyri Subchloridi Mercurous Chloride Ointment. Calomel Ointment Oint. Subchloride Mercury.	Incorporation.	1 in 10.	
Potassii Iodidi Potassium Iodide Ointment.	Incorporation.	1 in 10.	Contains potassium carbonate and water.
Staphisagriæ Stavesacre Ointment.	Digestion and fusion.	About 1 in 10.	Contains yellow beeswax.
Sulphuris Sulphur Ointment.	Incorporation.	1 in 10.	
Sulphuris Iodidi Sulphur Iodide Ointment.	Incorporation.	1 in 25.	Sulphur iodide levigated with glycerin.
Zinci Zinc Ointment. Ointment Zinc Oxide.	Fusion.	3 in 20.	Finely sifted zinc oxide required.

III. Having Soft Paraffin for their Base.—Three.

Hydrargyri Nitratis Dil. Dil. Mercuric Nitrate Ointment. Diluted Citrine Ointment.	Incorporation.	1 strong ointment in 5.	Soft paraffin, yellow.
Hydrargyri Oxidi Flavi Yellow Mercuric Oxide Ointment.	Incorporation.	1 in 50.	Soft paraffin, yellow.
Zinci Oleatis Zinc Oleate Ointment.	Fusion.	1 in 2.	Soft paraffin, white, with recently prepared zinc oleate.

IV. Having Both Hard and Soft Paraffins for their Base.—Three.

Creosoti Creosote Ointment.	Fusion.	1 in 10.	Creosote added after fusion.
Eucalypti Eucalyptus Ointment.	Fusion.	1 in 10.	Oil of eucalyptus.
Paraffini Paraffin Ointment.	Fusion.	Paraffins, Hard-3, Soft-7.	Basis for ten official ointments.

UNGUENTA—*Continued.*

Names and Synonyms.	Process.	Strength.	Remarks, Constituents, etc.
V. Having Paraffin Ointment for their Base.—Ten.			
Unguentum: Acidi Borici Boric Acid Ointment. Boracic Acid Ointment.	Incorporation.	1 in 10.	Boric acid in very fine powder.
Acidi Carbolici Carbolic Acid Ointment. Phenol Ointment.	Incorporation.	1 in 25.	Glycerin to dissolve phenol.
Acidi Salicylici Salicylic Acid Ointment.	Incorporation.	1 in 50.	Avoid using steel spatula.
Glycerini Plumbi Sub-acetatis. Lead Sub-acetate Ointment. Oint. Glyc. Lead Sub-acetate. Goulard's Ointment.	Incorporation.	1 in 6.	Glycerin of lead sub-acetate used.
Hydrargyri Ammoniati Ammoniated Mercury Oint. White Precipitate Ointment.	Incorporation.	1 in 10.	
Hydrargyri Oxidi Rubri Red Mercuric Oxide Ointment. Red Precipitate Ointment.	Incorporation.	1 in 10.	Levigate HgO with water.
Iodoformi Iodoform Ointment.	Incorporation.	1 in 10.	Levigate iodoform with alcohol.
Plumbi Acetatis Lead Acetate Ointment.	Incorporation.	1 in 25.	
Plumbi Carbonatis Lead Carbonate Ointment. Ung. Cerussæ.	Incorporation.	1 in 10.	
Plumbi Iodidi Lead Iodide Ointment.	Incorporation.	1 in 10.	
VI. Having Hydrous Wool-Fat for their Base.—Two.			
Conii Conium Ointment. Hemlock Ointment.	Incorporation.	2 juice in 1.	Conium juice (8), evap. to (1) at 140°F.(60°C.)
Hamamelidis Hamamelis Ointment. Witch Hazel Ointment.	Incorporation.	1 in 10.	Liq. ext. hamamelis.

UNGUENTA—*Continued.*

Names and Synonyms.	Process.	Strength	Remarks, Constituents, etc.
VII. Having Almond Oil with Spermaceti and White Wax.—Two.			
Unguentum:			
Aquæ Rosæ Rose-water Ointment. Cold Cream. Unguentum Galeni.	Fusion and Incorporation.	7 in 19.	Scented with oil of rose.
Cetacei Spermaceti Ointment.	Fusion.	1 in 5.	Benzoated.
VIII. Having Olive Oil for their Base.—Two.			
Capsici Capsicum Ointment.	Digestion.	1 in 5 about.	Contains spermaceti.
Hydrargyri Compositum Compound Mercury Ointment	Fusion.	Merc. Oint. 1 in 2⅓.	Contains yellow beeswax and camphor.
IX. Having Yellow Wax for a Base.—One.			
Picis Liquidæ Tar Ointment.	Fusion.	5 in 7.	

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