BRITISH HOMŒOPATHIC PHARMACOPŒIA

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BRITISH HOMŒOPATHIC

PHARMACOPŒIA

PUBLISHED BY THE

BRITISH HOMŒOPATHIC SOCIETY.

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LONDON

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BY

J. E. ADLARD, BARTHOLOMEW CLOSE, E.C.

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PREFACE.

In issuing a new Pharmacopœia the British Homœopathic Society have endeavoured to supply a want which has long been felt in consequence of the number of new remedies that have been proved within the last twenty years.

In 1834, *Dr. Quin, the President of this Society*, edited *The Pharmacopœia Homœopathica*, in Latin, in the preface to which the following authorities are referred to: viz. Hahnemann's *Reine Arzneimittelehre* and *Kronischen Krankheiten*, published at various times between 1811 and 1832; Stapf's *Archiv für die Homœopathische Heilkunst*; Hartlaub and Trinks' *Annalen der Homœopathischen Klinik*; and the *Homœopathisches Dispensatorium für Aerzte und Apotheker*, published by Gaspari in 1825, of which Hartmann published a Latin edition in 1827, a German ditto in 1829, and a fourth, entitled *Homœopathische Pharmacopoe für Aerzte und Apotheker* in 1832; Belluomini's translation of Caspari's work into Italian in

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1829, and La Raja's *Elementi di Farmacopea Omiopatica, estratti dalla Materia Medica di Hahnemann*, published in the same year at Naples. Since Dr. Quin's Latin edition of the Pharmacopœia the following works have chiefly regulated the operations of homœopathic chemists, viz. *Jahr's Pharmacopœia and Posology*, which appeared in Germany, and was translated into English by Kitchen and published in Philadelphia in 1842; Buchner's Pharmacopœia to which Jahr refers; Gruner's *Hoinöopathische Pharmacopöe*, compiled and published in 1845; Dr. G. Schmid's work on Pharmacy and Posology, which appeared in 1846; an English *Homœopathic Pharmacopœia and Posology*, "compiled from the works of Buchner, Gruner, and Jahr, with original contributions by Chas. J. Hempel, M.D.," by Messrs. Leath and Ross in 1850; Buchner's second and enlarged edition of his *Homöopathische Arznei-Bereitungslehre*, in 1852; and an "authorised English edition" of Carl Ernst Gruner's *Homœopathic Pharmacopœia*, published in Leipsic, London, and New York, in 1855; since which no work has appeared that has become a standard among the homœopathic chemists.

In collecting the materials for the following work, the Committee appointed by the British Homœopathic Society, at their annual meeting in June, 1867, set before themselves the following objects:

1. The identification of all the substances used as homœopathic medicines, concerning which any doubt existed.

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2. The revision of the various pharmaceutical processes.

3. The supplying of good practical tests, whereby the identity and the purity of each medicine could be ascertained.

In carrying these various objects into effect they have made use of all the sources of information within their reach, and as regards not a few of them they have instituted direct experiments.

In identifying the plants used as medicines various methods have been followed. For example, in those instances where the medicine is officinal in the "BRITISH PHARMACOPŒIA OF 1867" (*published under the direction of the General Council of Medical Education and Registration of the United Kingdom, pursuant to the Medical Act*, 1858) the Committee have accepted the conclusions arrived at by the compilers of that work, knowing that every endeavour has been made by them to render their work perfect. As regards substances peculiar to Homœopathy, they have been guided by such information as could be obtained from the existing works on Homœopathic Pharmacy, and from botanical works, as well as from notices in the periodical literature of our school. It has often happened that botanical authority has decided on the identity of two or more plants known under different names, and in these cases the source of the officinal preparation has been decided upon other grounds. For example, *Pulsatilla nigricans*, *Pulsatilla Nuttaliana*, and *Anemone*

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pratensis, appear to be three forms of one and the same plant, of which the first is common in Germany, the second in America, and the third in England. Again, as regards *Bryonia alba* and *Bryonia dioica*, since it is known that for twenty-five years many English Homœopaths have used chiefly the *B. dioica* (at any rate, all who have employed low attenuations), and found it answer to the medical characters given to the *B. alba*, it has been thought expedient to record *both as officinal*. It is strongly recommended, however, that in every instance where it is possible the exact variety (in fact, best of all, *the identical preparation*) used in the provings should be employed for making the higher attenuations. This suggestion is made because it is quite possible that the same natural causes which have modified the physical characters of the plant, and produced the variety, may have equally modified its pathogenetic effects, at least as regards its most refined symptoms.

In revising the pharmaceutical processes the Committee have been greatly assisted by some of the leading homœopathic chemists, who have undertaken numerous experiments on their behalf.

In supplying tests for identifying, and ascertaining the purity of, various substances, the Committee have largely availed themselves of the BRITISH PHARMACOPŒIA OF 1867. It seemed to be a work of supererogation to go over again the ground which had already been worked so well, and at so much cost of time and labour.

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Many of the chemical substances used in Homœopathy are employed also by the old school, and since the majority of these are best prepared on a large scale, it has been recommended that they should be obtained from the manufacturing chemists, while, at the same time, it is urged that in every instance their purity shall be determined by direct experiment, before any of them are used for making our preparations.

Throughout this work the *weights* and *measures* are those that have been adopted by the BRITISH PHARMACOPŒIA, and the system of *volumetric analysis*, which is often referred to, is that for which full details are published at the close of the same work, pages 392—400.

The object of this work is to instruct Homœopathic Chemists in all the processes peculiar to Homœopathic Pharmacy, but no attempt is made to teach them the entire art of pharmacy. No one should pretend to make homœopathic medicines who is not thoroughly versed in the art of pharmacy, and has not had large practical experience in the selecting of drugs, and in making all the ordinary preparations employed by chemists.

Again, no attempt has been made to teach *Botany* and *Natural History*; it has been deemed sufficient in reference to each article belonging to the *vegetable* and *animal* kingdoms to give the name, the natural order, and then the description of the exact species in sufficient detail for its

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identification; consequently a good practical knowledge of botany and natural history is essential.

Since there are various systems of classification in use, it is necessary to mention that all vegetable substances are referred to the *Natural Orders* adopted by *Dr. J. H. Balfour, Professor of Botany in the Edinburgh University*, and described by him in his "*Outlines.*" The animal substances have been referred to the classes and orders as given in the "*Compendium of Generic Distinctions,*" published in *The Illustrated Natural History* by *Rev. G. Wood,* and which he states to be that used by Owen, Gray, &c.

Finally, no attempt has been made to teach *Chemistry,* it being taken for granted that all who call themselves homœopathic chemists already possess a good practical knowledge of that science. For the purpose of avoiding confusion, the old and best-known names have been retained in the case of all chemical compounds, but, in addition, the *present name* of each, and its notation according to the new system, has been given on the authority of *Miller's Elements of Chemistry, fourth edition.* It has been urged that the names used by Hahnemann should be laid aside, and others adopted in accordance with the designations common in this country. The denomination of all compounds, however, is at present undergoing such repeated changes that no alteration made could be final, and hence the compromise has been adopted of retaining the old and referring to the present name in each case.

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With these prefatory remarks, the *British Homœopathic Society* commend their new Pharmacopœia in the sincere hope that by its universal adoption the difficulties arising from vague and varying preparations may be overcome.

For, and in the name of, the British Homœopathic Society,

FREDERIC F. QUIN, M.D.,
President of the Society.

HENRY R. MADDEN, M.D.,
Convenor of the Pharmacopœia Committee.

London, 1870.

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INTRODUCTION.

In addition to a good practical knowledge of botany, natural history, chemistry, and pharmacy, the homœopathic chemist must bring to his work thorough honesty of purpose and painstaking accuracy of detail. Without these, he can never succeed in preparing the medicines in a manner to satisfy the homœopathic practitioner, but with these qualifications he will find in the following pages all that he requires.

It is a fundamental rule in homœopathic practice to employ no medicine which has not been first *proved*, by ascertaining its effects when given to healthy persons. This is a necessity of the law of *similars*, which requires that all diseases shall be treated by medicines that have been shown to be capable of producing on the healthy body symptoms in all essentials similar to those present in the sick person.

In all Hahnemann's researches, as well as in the provings which have been subsequently made, simple substances only, with very few exceptions, have been used;

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it follows therefore that homœopathic pharmacy employs few compounds.

Hahnemann's experiments having shown that many insoluble and inert substances become active medicinal agents after they are reduced to an impalpable powder and diffused equally through a large quantity of some non-medicinal substance, a class of preparations, unrecognised in ordinary pharmacy, has been introduced under the name of *triturations*. It is not the object of this work to discuss any theoretical questions, and hence no opinion will be expressed on the much-disputed point of *dynamization* or the development of power by means of rubbing or succussion. It is essential, however, to refer to the facts of the case, which may be briefly stated as above, and it is important to notice both the results of the process of trituration, viz. the reducing of the material to an extremely fine powder, and also the separation of these very fine particles from one another by a careful admixture with some inert substances. Mere grinding, so as to secure the utmost attainable reduction of size of the particles on the one hand, or the most careful mixture of the substance with some inert material, so as to isolate each particle, on the other, will not serve our purpose. In all Hahnemann's experiments both these conditions were secured, and consequently in repeating his experiments both must engage our attention.

The medicinal efficacy of these triturations led the way to the use of very much diluted tinctures, and,

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was followed in course of time by the systematic dilution of all medicines according to a fixed scale. These diluted preparations have been called indiscriminately *Dilutions*, *Attenuations*, and *Potencies*, but since the latter term involves a theory it will not be employed in the following pages. *Attenuation*, being on the whole the preferable name, will be invariably used to denote every preparation which contains less of the crude material than the strongest officinal preparation.

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HOMŒOPATHIC PHARMACOPŒIA.

PART I.

GENERAL RULES.

There are only three forms of preparation recognised in homœopathic pharmacy:

1. *Solution* in water, in alcohol, or very rarely in ether.
2. *Trituration* with sugar of milk.
3. *Attenuations.*

It will be necessary to preface the descriptions of these operations by an account of the menstrua employed in carrying them out.

Water.

Nothing but the purest *distilled water* must ever be used in the preparation of any of the medicines. The ordinary distilled water sold by wholesale druggists is quite inadmissible, from the fact of its being almost always distilled in metal stills, and hence it cannot be sufficiently pure for our purpose.

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All the water used by homœopathic chemists must be distilled in an apparatus made entirely of glass or porcelain. The apparatus should never be much more than half filled with water, and the distillation should be carried on at a gentle heat, so as to guard against any of the water boiling over. Whatever quantity is distilled, the first 20th part should be rejected, and only 16½ parts should be carried over. For example, in distilling 10 pints, the first 10 fluid ounces would be thrown away, and the next 8 pints would be preserved, after which the process would be stopped.

Tests.—It possesses neither colour, taste nor smell. Evaporated in a clean glass capsule, it leaves no visible residue. It is not affected by Hydrosulphuric Acid, Ammonic Oxalate, Argentic Nitrate, Baric Chloride, or solution of Lime.

Alcohol.

This is the most important of all the menstrua employed by the homœopathic chemist, and too great care cannot be exercised to ensure its purity. It should be purchased in the form of *Rectified Spirit* from a respectable distiller, and should then be tested as directed in the British Pharmacopœia.

Characters and Tests.—Colourless, transparent, very mobile and inflammable, of a peculiar pleasant odour, and a strong spirituous burning taste. Burns with a blue flame without smoke. Specific gravity 0·838. Remains clear when diluted with distilled water. Odour and taste purely alcoholic. Four fluid ounces with 30 grain measures of the volumetric solution of Nitrate of Silver exposed for twenty-four hours to bright light, and then decanted from the black powder which has formed, undergoes no further change when again exposed to light with more of the test.

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Having thus ascertained that it is of average purity, it should be mixed with recently burned charcoal in coarse powder, using a bulk of charcoal equal to about one tenth of the bulk of spirit, and redistilled in a glass apparatus with all the precautions mentioned under "Distilled Water," and no alcohol which has not undergone this fresh distillation should be employed, especially in making the attenuations.

The following strengths should always be kept on hand, and should be made by the chemist himself, using distilled water for the dilution, prepared as already described.

1. *Dilute Alcohol.*—This is made by mixing equal measures of rectified spirit and distilled water. The mixture should have a density of ·935, and contains 42 per cent. of absolute alcohol.

2. *Proof Spirit* (of the British Pharmacopœia).—This is made by mixing 5 measures of rectified spirit with 3 measures of distilled water. It should have a density of ·920, and contains 49 per cent. of absolute alcohol.

3. *Spirit of* 20 *O.P.* (over proof).—This is made by mixing 6 measures of rectified spirit with 2 measures of distilled water. It should have a density of ·888, and contains 63 per cent. of absolute alcohol.

4. *Spirit of* 40 *O.P.* (over proof).—This is made by mixing 7 measures of rectified spirit with 1 measure of distilled water. It should have a density of ·865, and contains 73 per cent. of absolute alcohol.

5. *Rectified Spirit* (= 60 over proof) has, as before stated, a density of ·838, and contains 84 per cent. of absolute alcohol.

6. *Absolute Alcohol,* having a density of about ·793, is required for a few of the preparations, and may be obtained from rectified spirit in the following manner :— Take an ox-bladder, wash it carefully inside and out,

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distend it with air and hang it up to dry. Then moisten it with distilled water, and paint over the inner surface with a solution of isinglass; redistend it, having tied a small glass tube in the neck, then cork the tube and let it dry. When dry, remove the cork and fill it seven eighths full of rectified spirit; replace the cork firmly and suspend the bladder in the dry warm air of a stove, where the temperature will remain pretty steady, at about 100° Fahrenheit. After eight or ten days it will be found that the rectified spirit has lost a good deal of its water, and when it ceases to lose water it should be removed from the bladder and distilled with charcoal, as directed for rectified spirit. It will seldom happen that the density will reach ·793; but, with care, ·800 can be attained, and as this only represents 2 per cent. of water, it will be found strong enough for the purposes for which it is required. It is very necessary to preserve absolute alcohol in well-stoppered bottles tied down with bladder, since it attracts water from the air as greedily as Sulphuric Acid, and would therefore be rapidly spoilt by exposure.

Æther.

This is required for very few of our preparations. It may be purchased from the manufacturing chemists, and examined as follows:

Characters and Tests.—A colourless, very volatile and inflammable liquid, of a well-known and characteristic odour, boiling below 105° Fahr. Specific gravity between ·735 and 720, the latter representing perfectly pure æther. Mixed with an equal volume of water, shaken well, and allowed to stand, nine tenths will separate and float on the water undissolved. It evaporates without residue.

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Sugar of Milk.

This is a very important substance in homœopathic pharmacy, and great care must be taken to ensure its purity. It has been selected for the purposes to which it is applied for two reasons—1st, because it is devoid of all medicinal action; and 2nd, because its crystalline particles are very hard, and hence are of great use in grinding down the particles of drugs submitted to the process of trituration. It is never found pure in commerce, and even that which is professedly prepared for homœopathic use is very seldom free from adulteration. Starch is very commonly found mixed with it, and this will seriously interfere with its triturating power. The homœopathic chemist should examine every sample when purchased before attempting to use it for triturations. The ordinary commercial article may be refined for our purpose as follows:

Reduce it to a coarse powder, and dissolve it by boiling it in double its quantity of distilled water. While yet boiling hot, filter it through white blotting paper which is spread over a new filtering-cloth, into an earthen vessel of sufficient size, and which should contain as much rectified spirit as the water used for the solution of the sugar of milk. As soon as these two liquids come in contact with each other, the sugar of milk is precipitated in the shape of pointed crystals, which accumulate at the bottom or adhere to the sides of the vessel. After the filtering, and before setting the vessel aside for cooling, it is advisable to stir the liquid well with a clean stick, in order to secure a more perfect intermingling of the particles. The whole process should be carried on at the

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lowest possible temperature which facilitates the precipitation of the sugar of milk.

After the lapse of a few days, the liquid which floats over the sugar of milk is poured off* slowly, and the sugar, having been detached from the sides and bottom of the vessel, is washed once or twice with distilled water, after which it is spread in thin layers on clean paper over sieves, and carefully dried. It is then pulverised as finely as possible in a perfectly clean mortar. As a matter of course, the sieve which is used for the sugar of milk should be a very fine one, and not be used for other purposes.

The sugar should be kept in a dry cool place, in well-closed glass jars.

Having given an account of the menstrua employed in the preparation of homœopathic drugs, it is necessary in the next place to lay down a few general rules for the selection of the remedies themselves.

Homœopathy makes use of all materials which are capable of modifying the health of living creatures, and hence collects its remedies from all the three kingdoms of nature. The following are considered the acknowledged methods of securing the best and most reliable preparations :

1. As far as possible, collect all vegetable and animal products fresh.

2. Where they are the produce of foreign countries and can be only had as imported, obtain them from trustworthy druggists, but always in the state in which they were imported—never in the form of powder.

(This precaution is necessary since druggists never hesitate to use the same mill for grinding different medi-

* The alcohol which is contained in this liquid can be redistilled, and is as good as before, though weaker.

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cines, a laxity which would be unpardonable in a homœopathic chemist.)

3. As regards plants, the time for collecting these must be regulated by the part which is officinal. Vegetable physiology must be here the guide, since it will enable us to predicate the exact time when the part will display most fully its characteristic properties. A few exceptions may exist to the following conclusions, but, as a general rule, it will be found that—

When the *whole plant* is used, it should be gathered when it is partly in flower and partly in seed.

When the *leaves* are used, they should be collected just before or during the early part of the flowering time.

This rule requires modification in the case of biennials, since the leaves which first appear in the spring of the second year are in this case the best, and should be collected as soon as the flowering stem begins to shoot

When the *flowers* are used, they should be collected partly in bud and partly expanded.

When the *seeds* and *fruits* are the officinal part, they should be collected when fully ripe, unless otherwise ordered.

When the *young shoots* are ordered, they should be collected in spring, when the whole plant is in full vigour.

When the *bark* is employed, it must be collected either in the early spring or the autumn, most frequently at the latter season. The same rule holds with respect to the *root-bark*.

When the *wood* is the officinal part, it should be collected late in the autumn, in fact, after the fall of the leaf if the tree is deciduous.

When the *root* is the part employed, it may be collected either late in the autumn or early in spring, but never when the aërial parts of the plant are in full activity.

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4. After the fresh materials are collected they should be prepared as soon as possible, for the purpose of avoiding all deterioration. If gathered at some distance from home, the fresh plants should be packed carefully in a tin case (an ordinary botanical box) and kept as cool as possible. If, however, there will be no opportunity for preparing them for some time after their collection, they must be carefully dried by tying them in loose bundles and hanging them up in the shade, protected from rain, &c., and as soon as they are dry they should be carefully packed in hermetically sealed tin cases.

5. The same rules, so far as they apply, must be followed in the collecting of animal substances.

6. All minerals and chemical compounds must be carefully tested before they are used.

7. From the time that the medicinal substances are obtained until they are converted into the regular pharmaceutical preparations they should be most carefully preserved from damp and dust, from contact with other medicinal materials, from strong odours of any kind, and from light. All should be preserved in glass or earthenware jars or bottles, and be well corked or stoppered.

It will now be necessary to give in detail the directions for making the different preparations.

I.—SOLUTIONS.

(A). Solutions in Distilled Water.

Several saline substances are directed to be dissolved in distilled water. In such cases 10 grains by weight of the salt must be dissolved in 100 minims by measure of the water, and no such preparation can be considered satis-

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factory unless the solution is perfectly free of all sediment and continues clear and transparent. If, after a time, it deposits any crystals, or if any of the salt effloresces around the neck of the bottle, or if a fibrous-looking sediment *(conferva)* appears in the solution, or if the solution changes colour materially, in each and all these instances the preparation should be rejected and a fresh quantity made. Since many aqueous solutions do not keep for any length of time, it is well to dissolve only a sufficient quantity of the salt at a time to meet the current demand, and to make this first decimal attenuation again and again as required. The salt itself should be obtained in sufficient quantity to last for some time, except in the case of perishable compounds, so as to avoid the necessity for repeated analyses to ensure the purity of the articles.

(B). Solutions in Alcohol.

TINCTURES.

The objects to be obtained in these preparations are the following :

1. A preparation containing all the soluble ingredients of the substance employed.

2. A uniform strength, so that it may be always known exactly how much of the dry crude material is represented in a given measure of the tincture.

3. A fixed alcoholic strength, so that in making dilutions all decomposition may be avoided, by using a spirit of the same alcoholic strength as that existing in the tincture.

These objects may be attained in the following manner :

1. The complete solution of all soluble matter can be

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accomplished by varying the alcoholic strength to suit the nature of the ingredients in each plant; using a very dilute spirit where the ingredients are chiefly soluble in water, and a strong spirit where alcohol is the best solvent. Also, by using a sufficient quantity to ensure the complete exhaustion of the plant.

2. The uniform strength of tincture is advisable for many reasons, and especially in connection with the making of attenuations. Hitherto, the mother tinctures made from fresh plants have varied greatly in strength, not only among themselves, but the tincture of the same plant differs from time to time, according to whether the fresh plant chanced to be more or less juicy. As a consequence of this, the lower attenuations will vary equally in strength, since in every instance the same number of drops of mother tincture is added to a given quantity of spirit. To obtain this uniformity it is necessary to ascertain the quantity of moisture contained in the fresh plant, and to allow for this in making the tincture.

In every instance the dry crude substance is taken as the starting point from whence to calculate the strength, and, with very few exceptions, *the mother tinctures contain all the soluble matter of one grain of the dry plant in* 10 *minims of the tincture.*

3. It will be noticed that a series of tables are given at the close of the tincture process, by means of which the pharmaceutist is to calculate the exact quantity and strength of spirit which he has to use in the case of each medicine. The necessity for these tables is owing to the water present in the fresh plant mixing with and diluting the spirit employed in making the tincture, so that the alcoholic strength of the tincture never corresponds with that of the spirit used in its preparation, a circumstance which interferes materially with the making of trustworthy

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attenuations, since it is essential that the first attenuation of a mother tincture should be made with a spirit of precisely the same strength as that in the tincture itself.

PROCESS OF MAKING TINCTURES OF VEGETABLE SUBSTANCES.

I.—By Percolation.

This process should be used in all cases of dry plants, roots, seeds, &c., and in the case of such fresh plants, &c., as contain less than 60 per cent. of water.

Preparing the Percolator.— Take a York Glass Company's percolator (see fig. 1), tie over the small end a piece of fine, well-washed *book muslin.* Place upon the muslin a layer of about a quarter of an inch of coarsely powdered green glass,* then a layer of finely powdered glass half an inch in depth, and lastly a thin layer of coarsely granulated glass. The percolator is now ready for receiving the drug.

Preparing the Drug.—1. *If dry,* reduce 4 ounces by weight to a moderately fine powder, by bruising in a mortar. 2. *If fresh,* cut the plant in pieces, bruise it, and finally pass it through one of Kent's† sausage-machines,

* *Note.*—The green glass should be prepared by pounding in a mortar well-washed and dried common green bottles; the powder should then be washed with distilled water, to get rid of the *impalpable powder*, and after being well dried it should be sorted into three sizes of *coarse* and *fine powder*, and *granulated glass*, by passing through sieves of different degrees of fineness.

† This machine is recommended because it takes to pieces so easily, and admits of the most thorough cleaning.

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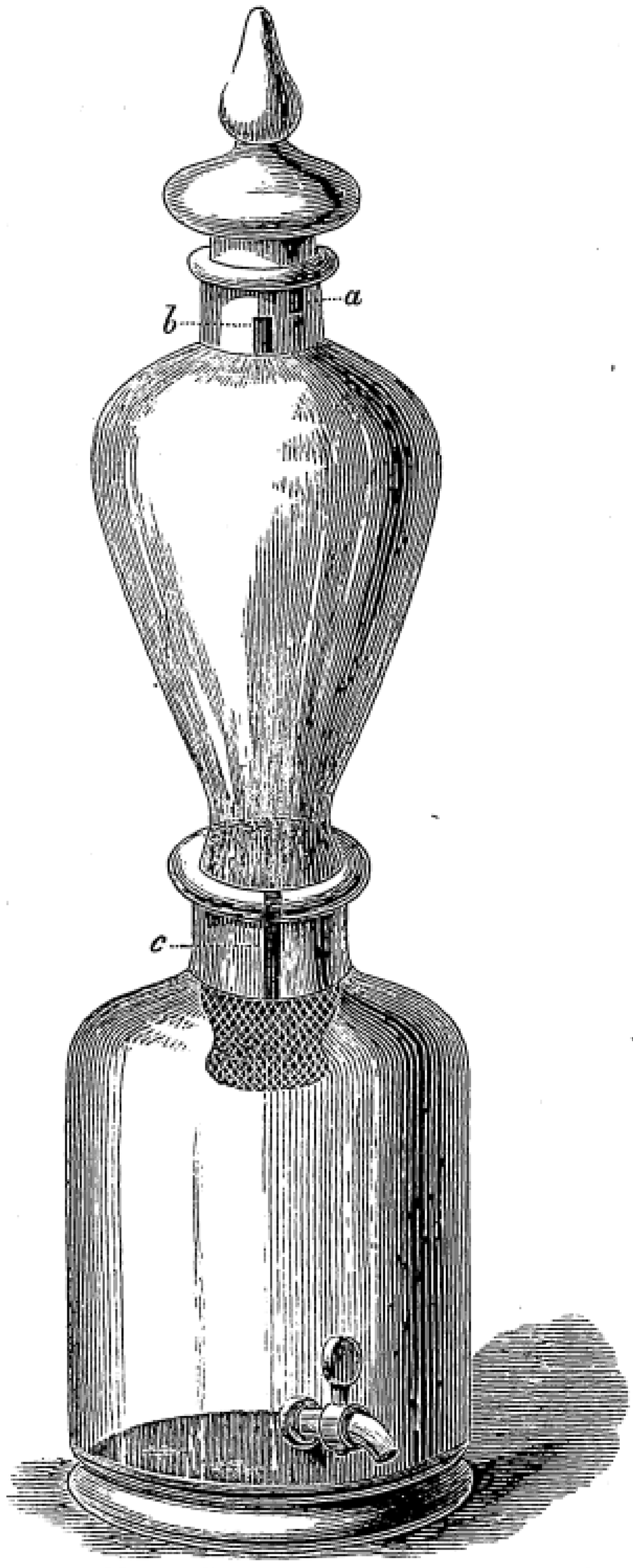

Fig. 1.—York Glass Company's Percolator.*

* This percolator has been decided on because it is one of the best the Committee are acquainted with. It is entirely made of glass, and is readily cleaned. The chief advantage, however, consists in its ingenious valves, by which the process of percolation can be stopped at any time, and the sub-

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so as to reduce it to a fine and uniform pulp. Then weigh 100 grains of the pulp, and dry it carefully on a water-bath until it ceases to loose weight; re-weigh it, and ascertain how much it has lost in drying. If the loss does not exceed 60 per cent., proceed as follows :—

Packing the Material.—Insert the powder or the moist magma, as the case may be, little by little, spreading it evenly, and pressing it down gently with a broad cork fixed to a long glass rod, taking care to get a uniform and compact mass, not too tight, but free from fissures or empty spaces; this done, cover the surface with a thin layer of finely powdered green glass.

Making the Tincture.—Having ascertained, by reference to the Pharmacopœia, the strength of spirit required and the quantity, which in the case of dry substances will be 40 fluid ounces, but in the case of fresh plants, &c., must be ascertained by a reference to the tables which follow these directions—1. Take one fourth or one fifth of the entire quantity of spirit required, and resting the cork, with the glass rod attached, on the top of the pounded glass, pour the spirit in a gentle stream down the glass rod, so that it may fall on the cork and spread gradually over the surface, without disturbing the pounded glass. 2. Remove the glass rod, put in the stopper, and in the case of dry substances close the valves at once. When working with fresh plants, however, leave the

stance be left to macerate in the spirit as long as may be necessary. The valves are made by cutting a groove half way across the ground surfaces of the percolator and stopper respectively; it hence follows that, when the two grooves are in a straight line, the air can enter and percolation will go on; when, however, they are not opposite to each other, the two compartments will be completely stopped off and rendered air-tight. At *a* and *b* in the figure the grooves are shown in the closed position, while at *c* the valve is open.

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valves open until the following quantities of fluid, which will be chiefly juice, have passed through into the receiver. For example, if the moist magma has lost between 30 and 40 per cent. in drying, let 1½ fluid ounce drop through; if between 40 and 50 per cent., 2 fluid ounces; if between 50 and 60 per cent., 2½ fluid ounces; then close the valves. 3. In all cases, after the valves are closed, let them remain so for twenty-four hours, and then open them and allow the fluid to percolate into the receiver until no more drops through. 4. Then add another fourth or fifth part of the spirit in the same cautious way that the first was added, and close the valves at once, and let them remain closed for at least six hours, and then re-open the valves and proceed as before, repeating the process again and again, adding one fourth or one fifth part of the required quantity of spirit each time, until the whole quantity has been poured into the percolator. 5. When the last quantity has ceased to drop through, remove the material from the percolator and press strongly. 6. Mix the various portions together, and let stand for twenty-four hours, and then filter.

N.B.—The whole amount of tincture obtained after filtration will never be found to equal the quantity of spirit employed, as there is always some loss during the process of percolation. This loss must be submitted to, as no addition of spirit to the tincture can be made without reducing its proper strength.

Modification of the process for percolation, to be adopted in the case of plants which have much mucilaginous juice, and hence will not allow the spirit to pass through readily.

Reduce to a pulp, ascertain the per-centage of water, and weigh out 4 ounces of moist magma, as before, then—

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1. Previously to packing the moist magma in the percolator, prepared as before, put it into a press and extract as much juice as possible, which juice should be at once poured into the receiver of the percolator. 2. Remove the mass from the press, and pass it again through the sausage-machine, and then carefully mix it with an equal bulk of pounded green glass. 3. Pack this mixture of magma and pounded glass in the percolator, and proceed as before.

II.—By Expression and Maceration.

This process is preferable in the case of all fresh vegetable substances containing more than 60 per cent. of water. 1. Reduce to a pulp, ascertain the per-centage of water, and weigh out 4 ounces of the moist magma, as before. 2. Put the moist magma into a press, and extract as much juice as possible. 3. Pour the juice into a stoppered bottle, and keep in a cool dark place until the rest of the process is completed. 4. Having ascertained, by reference to the Pharmacopœia, the strength of spirit directed for the plant operated on, and the quantity by reference to the tables, pass the squeezed magma a second time through the sausage-machine, and throw it loosely into a wide-mouthed stoppered bottle, and then pour one-half or one third of the quantity of spirit over it, so as just to cover the magma; put in the stopper, and allow it to macerate twenty-four hours. 5. Decant off any spirit which will pour out from the magma, and mix it at once with the expressed juice, and repeat the process with another portion of the spirit, and again macerate twenty-four hours. 6. When all the spirit has been used, replace the magma in the press, and extract as much liquid as

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possible. 7. Mix the products together, let them stand twenty-four hours, and filter.

N.B.—In plants containing 80 or more per cent. of water, the quantity of spirit used will be too small to divide, and hence it must be all poured on the squeezed magma at once; and this should be allowed to macerate two days. On the other hand, in the drier plants of this class the quantity of spirit required may be sufficiently large to allow of percolation through the squeezed magma, which should in that case be packed in the percolator and treated as directed under process No. I.

Table No. 1.

Showing the amount of spirit required to make a tincture in which 10 minims will represent as nearly as possible 1 grain of the dry plant.

Moisture lost by the fresh magma in drying.	Measure of spirit to be used to every 4 oz. of moist magma.	
	Fl. oz.	Fl. dr.
30 per cent.	27	0
35 „	24	4
40 „	22	4
45 „	20	4
50 „	18	0
55 „	15	6
60 „	13	4
65 „	11	4
70 „	9	4
75 „	7	0
80 „	4	6
85 „	2	6

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Table No. 2.

Amount of Rectified Spirit required to make Alcohol of 40 O.P. with the water contained in 4 ounces of moist magma.

Moisture lost in drying.	Rectified spirit required.			Alcohol of 40 O.P. to be added up to		
	Fl. oz.	Fl. dr.	Min.	Fl. oz.	Fl. dr.	
30 per cent.	8	3	12	27	0	Vide Table 1.
35 „	9	6	24	24	4	
40 „	11	1	36	22	4	
45 „	12	4	48	20	4	
50 „	14	0	0	18	0	
55 „	15	3	12	15	6	

No fresh plant containing more than 55 per cent. of water can yield a 1 in 10 tincture with alcohol of 40 O.P.; either a more dilute alcohol must be used, or a weaker tincture made.

Table No. 3.

Amount of Rectified Spirit required to make Alcohol of 20 O.P. with the water contained in 4 ounces of moist magma.

Moisture lost in drying.	Rectified spirit required.			Alcohol of 20 O.P. to be added up to		
	Fl. oz.	Fl. dr.	Min.	Fl. oz.	Fl. dr.	
30 per cent.	3	4	48	27	0	Vide Table 1.
35 „	4	1	36	24	4	
40 „	4	6	24	22	4	
45 „	5	3	12	20	4	
50 „	6	0	0	18	0	
55 „	6	4	48	15	6	
60 „	7	1	36	13	4	
65 „	7	6	24	11	4	
70 „	8	3	12	9	4	

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No fresh plant containing more than 70 per cent. of water can yield a 1 in 10 tincture with alcohol of 20 O.P.; either a more dilute alcohol must be used, or a weaker tincture made.

Table No. 4.

Amount of Rectified Spirit required to make Proof Spirit with the water contained in 4 ounces of moist magma.

Moisture lost in drying.	Rectified spirit required.			Proof spirit to be added up to		
	Fl. oz.	Fl. dr.	Min.	Fl. oz.	Fl. dr.	
30 per cent.	2	0	0	27	0	
35 „	2	2	40	24	4	
40 „	2	5	20	22	4	
45 „	3	0	0	20	4	
50 „	3	2	40	18	0	
55 „	3	5	20	15	6	
60 „	4	0	0	13	4	
65 „	4	2	40	11	4	
70 „	4	5	20	9	4	
75 „	5	0	0	7	0	

Vide Table 1

No fresh plant containing upwards of 75 per cent. of water can yield a 1 in 10 tincture with proof spirit; either a more dilute alcohol must be used, or a weaker tincture made.

Table No. 5.

Amount of Rectified Spirit required to make *Dilute*

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Alcohol with the water contained in 4 ounces of moist magma.

Moisture lost in drying.	Rectified spirit required.			Dilute alcohol to be added up to		
	Fl. oz.	Fl. dr.	Min.	Fl. oz.	Fl. dr.	
30 per cent.	1	1	36	 27	0	Vide Table 1.
35 „	1	3	12	 24	4	
40 „	1	4	48	 22	4	
45 „	1	6	24	 20	4	
50 „	2	0	0	 18	0	
55 „	2	1	36	 15	6	
60 „	2	3	12	 13	4	
65 „	2	4	48	 11	4	
70 „	2	6	24	 9	4	
75 „	3	0	0	 7	0	
80 „	3	1	36	 4	6	

No fresh plant containing more than 80 per cent. of water can yield a 1 in 10 tincture with dilute alcohol; either a still more diluted alcohol must be used, or a weaker tincture made.

As an example of the method of using the *Tables*, take the following case:

Suppose a specimen of fresh *Belladonna* has been reduced to pulp, and the 100 grains have lost 56 grains in drying; then by reference to the Pharmacopœia it will be seen that *proof spirit* is directed for this tincture. Now, on referring to Table No. 4 it will be found that 4 ounces of moist magma, containing 55 per cent. (the nearest to 56)* of water, require 3 fluid ounces, 5 fluid drachms, and 20 minims of rectified spirit to form proof spirit with the

* N.B.—Five per cent. is the smallest amount of moisture which need be noticed practically when dealing with four ounces or upwards; hence, when the amount lost is between the per-centages stated, the figures should be taken which come nearest to the exact loss.

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water contained in the 4 ounces of moist magma; hence that amount of rectified spirit must be first poured into a large glass, and as by reference to Table 1 it will be seen that 15 fluid ounces and 6 fluid drachms of spirit are required to make a tincture representing 10 per cent. of the dry material where the fresh plant contains 55 per cent. of water, this amount must be made up by adding proof spirit until the whole measures 15 fluid ounces and 6 fluid drachms. This mixed spirit will then be used as directed for making the tincture, and the result will be a tincture of the alcoholic strength of *proof spirit*;—and hence proof spirit should be used for making the first two decimal attenuations—and will represent 1 grain of dry *Belladonna* in every 10 minims of the tincture.

The alcoholic solutions (tinctures) of animal substances are, with few exceptions, merely solutions in ten times the quantity by measure of spirit of the strength directed. A few, such as *Cantharis*, are prepared by percolation, and in that case they are treated in precisely the same way as vegetable substances.

PROCESS FOR MAKING TRITURATIONS.

This form of preparation was originally designed by Hahnemann, who also published minute directions as to how it should be performed. His method is still adhered to, and there is only one alteration which may with advantage be made, and that is in the proportion of sugar of milk to be used at each stage of the process. Hahnemann recommends 1 grain of the substance to be triturated with 99 grains of sugar of milk, and the process lasts one hour. It is, however, preferable to use the proportion of 1 grain of medicine to 9 of sugar of milk, and

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in this way each decimal trituration will occupy forty minutes, or each centesimal—being equal to two decimal triturations—to the making of which Hahnemann allotted one hour, will now occupy one hour and twenty minutes. The object of this change is chiefly to ensure a more thorough preparation, it being found by the microscope that the addition of so large a proportion of sugar of milk at one time (33 grains to 1 grain of medicine) renders it more difficult to reduce the size of the particles of the medicine, especially if they are hard, and thus deteriorates the value of the trituration. Since Hahnemann avowedly invented his process for the purpose of reducing the drug to the finest possible powder, the modification proposed is merely carrying out his own ideas to a higher degree of perfection.

The steps of the process are as follows:—Weigh any number of grains (not exceeding 100 grains) of the medicinal substance, and then weigh separately nine times as many grains of perfectly pure sugar of milk. Transfer half the quantity of the sugar of milk into a perfectly clean and dry Wedgwood mortar, then place the medicinal substance upon the milk sugar, and mix the two together with a horn or bone spatula. Using a pestle of the same material as the mortar, rub the mixture thoroughly and carefully during six minutes, taking care that it should be not only mixed thoroughly by the steady circular movement so well known to pharmaceutists in mixing powders, but also that the hard grinding motion, which is employed in incorporating pill-mass should be effectively used, so as to break up all large and hard particles. At the end of the six minutes scrape the pestle and mortar carefully with the spatula, so that nothing shall be left adhering to them, and stir the mixture again—a process which will usually occupy about four minutes. Again rub and stir

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the mixture with the pestle for six minutes as before, and again scrape all the particles off the mortar and pestle, and thus complete the first stage of the process. Now add the remainder of the sugar of milk, stir it well in with the triturated material, and proceed as before, viz. rubbing for six minutes, scraping and mixing for four minutes, again rubbing for six minutes, after which the trituration may be viewed as complete, and having once more scraped the whole together, it should be transferred to a perfectly clean dry glass bottle carefully corked, and labelled 1^{x}.

As the reducing of the medicine to the finest possible powder is a most essential point in this method of preparation, a small portion of the trituration should be carefully examined under the microscope, and if the particles are found to be very unequal in size, the trituration should be continued for twenty minutes longer, and the preparation re-examined before it is finally set aside as complete.

In consequence of the extreme difficulty with which pestles and mortars can be cleaned to the degree necessary for our refined processes, all careful homœopathic chemists procure perfectly new ones for each substance, and then label them with the name of the medicine, and never use them for any other purpose, and even, notwithstanding this, it is necessary to be very careful in the thorough washing and cleansing of the apparatus, since a very small quantity of 1^{x} trituration, for example, would injure the perfection of the 3rd centesimal.

All insoluble substances are submitted to this process, and as it is carried on as far as the 3rd centesimal attenuation (6^{x}), it follows that this thorough rubbing and mixing is continued until the medicine constitutes only the one-millionth part of the mixture. At this point experience has shown that even the most insoluble substances have

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become soluble both in water and alcohol; or, if not actually soluble, they are reduced to such minute particles that they are capable of permanent suspension through the fluid, so that it retains their medicinal virtues and answers all the purposes of a perfect solution.

Several attempts have been made to invent machines for triturating the drugs, some of which are very ingenious, and to a certain extent effective. The best we are acquainted with in this country is that of Mr. Hewitt, but even this cannot compete with the human hand; a careful microscopic comparison between machine- and hand-made preparations showed conclusively that when the medicinal substance was hard, and in considerable pieces, such as *Carbo vegetabilis* and *Aurum foliatum*, Mr. Hewitt's machine failed to reduce the particles to the same uniformly minute size which was attained in the hand-made triturations; when, however, the medicine was already in the pulverulent form, as *Mercurius biniodidum*, there appeared but little difference between the two modes of triturating. In consequence of this, no machine yet known can be recommended to be used in making the early triturations, at least of all substances which are not already in the form of impalpable powder or known to be very friable.

These constitute all the preparations recognised by Homœopathists, with the exception of pilules and globules, which, however, are merely *dispensing forms* of the tinctures.

INFUSIONS AND DECOCTIONS.

Many plants yield their virtues more fully to water than to alcohol or any other menstruum. There is, how-

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ever, a great practical difficulty as regards these preparations, and that is they will not keep, and accordingly it is still a desideratum that some method should be devised whereby they can be preserved from decomposition. It is probable that the addition of a certain proportion of *alcohol* or *glycerine* will effect this, and the subject is suggested as a very suitable one for experimentation. In the mean time these preparations must be made fresh when required. They are prepared as follows:

1. *Cold Infusions.*—Reduce the fresh plant to a magma or the dry plant to a coarse powder, pack it in a percolator precisely as directed for tincture making, then let 10 fluid ounces of distilled water for every 1 ounce of dry material be passed through the percolator in the ordinary way.

2. *Hot Infusions.*—Prepare the medicinal substance as above, and tie it loosely in a bag of clear well-washed book-muslin, and then pour 10 fluid ounces of boiling distilled water for every 1 ounce of dry material into a glass jar, and suspend the bag containing the substance in the water, and cover over the jar, and keep it in a warm place for an hour, when the fluid may be poured off, and that retained in the bag squeezed out, and the two mixed together and filtered.

3. *Decoctions.*—Prepare the plant as before, and put it into a glass matrass, then pour 10 fluid ounces of distilled water to each 1 ounce of dry material over it, and place the matrass in a water-bath, and raise it to 200° F., kept at that temperature for half an hour, when the fluid may be decanted and filtered.

If attenuations of these are required, they must be made as soon as the preparations are ready. Pure dis-

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tilled water being used for the 1st. decimal and centesimal attenuations, dilute alcohol for the 3rd decimal, and rectified spirit for the 2nd centesimal and upwards.

THE ATTENUATIONS.

Systematic dilution of medicines according to a fixed scale constitutes another of the peculiarities of homœopathic pharmacy. When Hahnemann had convinced himself of the curative power of infinitesimal doses, he devised and carried out the plan of making a series of preparations of each medicine, every one of which should contain exactly 100 times less of the drug than the one before it, and this constitutes the *centesimal scale*. His followers, however, being desirous of having preparations of a strength midway between those recommended by Hahnemann, adopted the plan of diluting in the proportion of 1 in 10 in place of 1 in 100, thus constituting a *decimal scale*. In consequence of this, very great confusion has arisen, and it is most essential that one or other should be adopted exclusively. After a careful review of all the arguments in favour of both scales, it has been determined to adopt the *centesimal scale* for prescribing, while the *decimal* possesses so many advantages in the preparation of the drugs that it should be always followed in the making of the triturations and other attenuations. When referring to the subject of *designating* the attenuations, an easy method will be described by which to avoid the possibility of any confusion arising from the use of one scale for preparing and the other for prescribing. The method of making the attenuations is as follows:

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Take a perfectly clean new bottle (say a half-ounce phial), fit a good new cork into it, and then, having removed the cork, pour in 20 minims of the mother tincture, then add 180 minims of spirit of the same alcoholic strength as that with which the mother tincture was prepared; cork the bottle, and, grasping it in the right hand, with the thumb held firmly over the cork, shake it well, letting each shake terminate in a jerk by striking the closed right hand against the open palm of the left hand; having given several such shakes, the attenuation is finished, and should be marked 1^x or A. 20 minims of 1^x, mixed and well shaken with 180 minims of spirit, will then form 2^x or 1; and 20 minims of 1, with 180 minims of spirit, well shaken, will form 3^x or B, and so on up to the highest attenuation required.

The strength of the spirit used for the attenuatious must be carefully attended to according to the following rules:

I.—The first attenuation made from a *trituration* (which will be 4) must be made as follows:—Dissolve one grain of the 3rd centesimal trituration in 50 minims of distilled water, and then add gradually 50 minims of rectified spirit, thus forming *dilute alcohol.*

N.B.—As sugar of milk is not soluble in less than six times its weight of cold water, and is insoluble in alcohol, a decimal solution of a trituration could only be made with pure water and would not keep; the *centesimal scale*, therefore, must be followed in preparing the first solution of a trituration.

a. The next attenuation, viz. 9^x, must be made with proof spirit.

b. The next, viz. 5, and all higher attenuations, must be made with rectified spirit (B. P.), *i. e.* 60 O.P.

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II.—The first attenuation of *mother tinctures* (which will always be .1^{x} or A) must be made with spirit of the same strength as that used in making the mother tincture, hence—

a. When the *mother tincture* is made with proof spirit *attenuation* 1^{x} or A must be made also with proof spirit, *attenuation* 1 with spirit 20 O.P., *attenuation* 3^{x} *or B and all above that* with rectified spirit.

b. When the *mother tincture* is made with *dilute alcohol, attenuation* 1^{x} or A must be made with dilute alcohol, 1 with proof spirit, 3^{x} or B with spirit 20 O.P., *and all above that* with rectified spirit.

c. When the *mother tincture* is made with *spirit* 20 *O.P., attenuation* 1^{x} or A must be made with *spirit* 20 *O.P.*, 1 *and all above that* with rectified spirit.

d. When the *mother tincture* is made with *rectified spirit*, the same will be used for all the attenuations.

III.—The attenuations made from *watery solutions* require to be modified by so many causes, such as the solubility of the medicine in alcohol, the tendency or otherwise to any chemical action between the alcohol and the substance to be attenuated, that the rule is in these cases laid down separately for each particular substance.

THE DESIGNATION OF THE ATTENUATIONS.

Hitherto great irregularity has existed in the methods of designating the attenuations, and as a consequence much confusion has resulted. By some homœopathic chemists the numbers 1, 2, 3, &c., have been used to denote

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the *decimal* scale, while others have adhered to Hahnemann's plan and confined their use to *centesimal preparations*, using 1^x, 2^x, 3^x, &c., to denote the *decimal attenuations*. A few, again, have used A to indicate 1^x, and B to denote 3^x, these two attenuations being almost the only ones in use which could not be expressed by the centesimal numbers. The best way of avoiding all this confusion is for the Homœopathic practitioners to adopt the *centesimal scale* only. The reasons for this are numerous, among which the following may be noted as of themselves sufficient to decide the matter.

1. All or nearly all employ the centesimal scale exclusively in denoting the high attenuation.

2. There are only two attenuations, viz. the 1st and 3rd decimal, which have been much used and which could not be equally well notated centesimally.

It is necessary now to advert to a fact which is often lost sight of, and yet which is very important for all those who prescribe the low attenuations, and that is the following:

The process of attenuation always commences from a point termed zero, and marked ϕ or θ, but the actual amount of medicinal substance contained in the zero differs materially, thus—

In all instances where *trituration* or *solution in distilled water* is had recourse to the ϕ represents the pure medicinal substance; *e.g. Acid. Nitric.* ϕ, *Arsen.* ϕ, *Kali Iod.* ϕ, *Brom.* ϕ, *Carbo veg.* ϕ, &c., always refer to the pure substance itself, and hence, in such cases, the 1st decimal attenuation contains 10 per cent. of the pure drug. On the contrary, in all cases where tinctures are made, *the strong tincture, and not the crude material, is marked* ϕ, and, as a consequence, the 1st decimal attenuation contains 10 per cent. of the tincture (no matter how dilute it may

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be), and not 10 per cent. of the pure drug. Since in the present Pharmacopœia the proportion of 1 in 10 has been fixed, whenever possible, for the strength of the *mother tincture*, it follows that *the* 1*st decimal attenuation* of a mother tincture corresponds in medicinal strength to the 1*st centesimal attenuation* of a trituration or watery solution. This uniformity of strength of the mother tinctures thus gets rid of much of the uncertainty which has hitherto existed as to the actual quantity of medicine contained in these preparations; but it would have been more satisfactory to have adopted one uniform standard for all. It was found, however, after much deliberation, that a change of this kind would for a time, at least, lead to so much confusion that it has been deemed advisable not to make any such radical change:

It is very necessary to adopt a uniform use of the sign ϕ, since much confusion is caused by different persons employing it in different senses. The following are the rules for its application:

1. It is used principally to denote the strongest officinal tincture, as *Bell.* ϕ, *Arnica* ϕ, *Canth.* ϕ, and these, according to the new Pharmacopœia, have an almost uniform strength of 1 in 10.

2. It is used to denote the strongest officinal preparation of substances whose actual strength is unknown, as *Caust.* ϕ, together with the animal poisons, as *Apis* ϕ, *Aranea* ϕ, *Lachesis* ϕ, &c.

3. It is used to denote the strongest solution in alcohol of substances which are also prepared by trituration, in which case the names should always be preceded by the sign *Tr.*, *e. g. Tr. Sulph.* ϕ, *Tr. Lycop.* ϕ.

4. It should never be used to denote the 1^x solution of any substance in alcohol or water, when the crude substance itself might be prescribed; for example, *Tereb.* ϕ,

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Kreos. ϕ, *Copaiva* ϕ, *Brom.* ϕ, *Kal. Iod.* ϕ, *Merc. cor.* ϕ, &c., should always mean the pure substances themselves, and their strongest officinal solutions should be denoted *Tereb.* 1^x, *Kreos.* 1^x, *Brom.* 1^x, *Kali I* 1^x, *Merc. cor.* 1^x, &c.

In short, the sign ϕ, *when meaning mother tincture*, should be strictly limited to the strongest solutions in alcohol of substances which are not, or cannot be, prescribed in their crude state.

As regards marking the attenuations, the following plan has been adopted as the least likely to be misunderstood :

ϕ. $\frac{1}{x}$; 1. $\frac{3}{x}$; 2. $\frac{5}{x}$; 3. $\frac{7}{x}$; 4. $\frac{9}{x}$; 5. $\frac{11}{x}$; 6, &c.

Or ϕ. 1^x; 1. 3^x; 2. 5^x; 3. 7^x; 4. 9^x; 5. 11^x; 6, &c.

Since only two decimal attenuations are at all frequently prescribed, namely, 1^x and 3^x, there can be no objection to notating these A and B, but the figure with the x below or at the side is preferable, since the chemists must use the higher decimal notation to mark the intermediate steps in the process of attenuation.

It is directed that in future no chemist will send out a decimal attenuation without the x being distinctly marked, and that no practitioner will prescribe a decimal attenuation without the distinctive mark, and also that all will abstain from using the decimal notation wherever the attenuation required can be expressed centesimally; for example, that 2^x shall never be used in place of 1, 4^x in place of 2, 6^x in place of 3, &c.

A careful attention to these simple rules will save a large amount of confusion.

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THE PRESERVATION OF THE MEDICINES.

A very few words will suffice upon this head. All that has already been written about the care necessary to avoid all exposure of the medicinal substances to damp, dust, strong smells, bright light, &c., during their preparation, applies equally to the preparations themselves after they are completed. All strong tinctures should be kept in a place entirely separate from the attenuations, and should be preserved in well-corked glass bottles, using stoppers only when the substance is corrosive, and kept constantly in the dark, in a dry cool place. The attenuations should also be preserved in corked bottles, in drawers, and it is a good plan to appropriate a separate drawer to each medicine.

It is not necessary to keep the whole series of attenuations, as many of them are very seldom prescribed. The following should, however, be always on hand, viz. all below 4, then 5, 6, 9, 12, 18, 24, 30.

THE DISPENSING OF THE PREPARATIONS.

The forms in which homœopathic medicines are dispensed are Powders, Tinctures, Pilules, and Globules.

The powders consist of sugar of milk, to which has been added a given quantity of the trituration prescribed, or on which has been dropped a given number of drops of the tincture. It is necessary, therefore, to remember that only those attenuations can be dispensed in the form of powder which have been made with rectified spirit. If prepared with a weaker spirit, the sugar of milk will partially dissolve, and thus a most inconvenient preparation will result.

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The tinctures themselves are often dispensed, either in bottles with directions to mix so many drops in a given quantity of water, or the prescriber orders so many drops to be mixed with so many ounces of water, and sent out as a mixture.

In order to possess a convenient form for administering fractions of a drop, Hahnemann adopted the plan of saturating sugar *globules* with the attenuated tincture, and then directing so many of these to be taken at a dose. Since Hahnemann's time a larger sugar globule, termed *pilule*, has been introduced, and is much used both in this country and America.

Another form of powder has been recommended in America, and used occasionally in this country, and is at times very convenient. It is called a *tincture-trituration*, and is prepared as follows:—A weighed quantity of sugar of milk is put into a mortar, and an amount of the attenuation (usually the mother tincture) measuring one half the weight of the sugar of milk is poured over it, and the whole is well rubbed together, forming a soft paste; this is put on one side in a dry place, lightly covered with paper to exclude dust, but not to prevent evaporation, and as the paste gets drier it is again and again rubbed up well and scraped from the mortar and pestle until it becomes quite dry, when it is put up in bottles and preserved like any other preparation. From the way it is made it will be obvious that two grains of a tincture-trituration will contain as much of the medicine as one drop of the tincture itself. Beyond the convenience of carrying them about and dispensing them as powders, there is no advantage in the tincture-trituration over the tincture, and it should never be used for the purpose of making the attenuations, which should invariably be prepared direct from the tinctures themselves.

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A few words must be said respecting the obtaining and medicating pilules and globules.

These preparations are made of sugar and starch, and it is always better to procure them from a manufacturer who prepares them especially for homœopathic chemists, rather than from the confectioner, who, having frequently to colour his preparations, would be very apt to employ his machinery indiscriminately for the coloured and the colourless, and hence the latter would not be sufficiently pure for our purpose.

In medicating the pilules and globules, the first step is to dry them carefully, since any moisture which they may possess will interfere with their absorbent power. A suitable quantity should then be placed in a bottle, and the tincture with which they are to be saturated poured over them in sufficient quantity to thoroughly moisten every one of them, and the regular admixture of the tincture and the globules should be ensured by repeatedly shaking, or, better still, by rolling the bottle horizontally in the hand. Some chemists fill the bottles with the tincture and leave them to macerate for several days, while others carefully ascertain how much the pilules and globules will absorb, and add exactly that quantity. Whichever plan is followed, the greatest possible care is required to secure perfect saturation. The latter process, when carefully carried out, has the advantage of avoiding all exposure of the pilules and globules in drying; whereas if the former plan is followed it is necessary, after a time, to pour off the excess of tincture, and to dry the pilules and globules between sheets of filtering paper, a plan which is objectionable on many accounts.

Before closing these practical directions it will be well to say a little about the proper method of cleaning the utensils employed by homœopathic chemists.

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It has been already stated that all careful homœopathic chemists set apart separate pestles and mortars for each medicine which has to be triturated.

All the mother tinctures, and especially all the attenuations should, in the first place, be put into perfectly new bottles, closed with perfectly new corks, and these should never in future be filled with any other medicine or attenuation.

It must happen, however, that measure glasses, bottles which have contained mixtures, &c., required to be used again and again, and hence it is well to know how they can be thoroughly freed from every trace of the medicine which they have previously contained. This may be effectually accomplished by *washing the bottle in an ascending stream of water*, in place of a descending stream, as is almost universally employed. The chemist should have a fine nozzle and stopcock adapted to his water cistern in his laboratory (over the sink), and so arranged that the stream of water ascends like the jet of a fountain. He then washes his bottle or glass, as the case may be, in the usual manner, carefully removing every visible impurity, and then, while the vessel is still wet, he should hold it over the fine nozzle (which must be fine enough to pass through the neck of the smallest sized bottle he has to wash), and while in that position open the stopcock and allow the stream to strike against the bottom of the glass or bottle he is washing ; in this way, as soon as the water mixes with the remains of the medicine, it flows down the sides of the vessel and escapes into the sink, and in a very short time not the slightest trace of medicine can remain in the glass or bottle. It can then be drained and dried in the ordinary way.

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ON THE DOSE.

It is essential to the principles of Homœopathy that medicines should be given in doses too small to produce their physiological effects. As regards minuteness of dose, however, there is no fixed limit; and hence it follows that all doses have their advocates, ranging from a few drops of the mother tincture up to the highest attenuations. In order, however, to afford some general idea of the sort of doses usually employed, two lists are given in the *Table of Medicines*—the first quoted from Dr. Quin's Pharmacopœia, and which is for the most part those originally proposed by Hahnemann; and the second quoted from Jahr's *Symptomen Codex*, which is chiefly on the authority of Noack and Trinks.

ON WRITING PRESCRIPTIONS.

The peculiarities of homœopathic pharmacy entail certain peculiarities in prescribing which must be noticed.

1. Since there are numerous preparations of each medicine, it is essentially necessary to mark this after the name of the medicine. For example, it is not sufficient to order *Belladonna*. The name must be followed by the sign denoting the particular preparation. Thus:

Bell. ϕ, Bell. 3^{x}, Bell. 6, Bell. 30,

would denote respectively *the mother tincture, the third decimal, the sixth centesimal, and the thirtieth centesimal attenuations* of the medicine.

2. After the sign denoting the preparation must follow the usual signs for the quantity, and in connection with it must be a notification as to whether *triturations, tinctures, pilules, or globules*, are wanted. Thus:

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Merc. vivus 3^{x} grs. 2 = 2 *grains of 3rd decimal trituration.*

Merc. vivus 6 gtt. 2 = 2 *drops of 6th centesimal tincture.*

Merc. vivus 6 pil. 2 = 2 *pilules of 6th centesimal attenuation.*

Merc. vivus 30 gls. 3 = 3 *globules of 30th centesimal attenuation.*

For brevity's sake these may be written thus:

Merc. vivus grs. $2/_{3^{x}}$, gtt. $2/_{6}$, pil. $2/_{6}$, gls. $3/_{30}$.

Following these necessary rules, the homœopathic prescriptions will assume some such forms as these:

For Powders.

Aconite 3^{x}, gtt. iij;
Sacchar. Lactis, grs. vj. M.
Fiat pulvis. Mitte tales iv.

Sig^{t}.—Dissolve a powder in dessert-spoonful of water, and take one dessert-spoonful every hours.

For Mixtures.

Belladonna 12, gtt. vj;
Aquæ destill., ℥vj. M.

Sig^{t}.—A dessert-spoonful to be taken every hours.

Two things are especially to be recommended, viz. that all prescriptions should be written in such a manner that any homœopathic chemist may read them with certainty and facility; and that the directions for taking the medicines should be so written that both patient and chemist can understand them.

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PART II.

DESCRIPTION OF THE MEDICINES AND THEIR PREPARATIONS.

ACIDUM BENZOICUM.

Benzoic Acid. $HC_7H_5O_2$.

Obtained from benzoin, a balsamic resin, which exudes from the incised bark of the *Styrax Benzoin*. *Nat. ord.*, STYRACACEÆ. It is prepared by sublimation, and can be purchased in a state of purity in crystals.

Characters and Tests.—Light feathery crystalline plates and needles, flexible, nearly colourless, and having an agreeable aromatic odour resembling benzoin. Soluble in 300 parts of cold water, in 12 parts of boiling water, in 4 parts of rectified spirit. Soluble also in lime water and caustic alkalies, and precipitated from the solution by Hydrochloric Acid. When heated it sublimes without residue.

Preparation. — Trituration or tincture, made with rectified spirit.

Reference to Hom. Proving.—Transactions of Amer. Institute of Hom., vol. i.

Proper forms for dispensing.—1^x *and upwards, Tincture, Pilules, or Globules.*

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ACIDUM FLUORICUM.

Present name.—Hydrofluoric Acid. HF.

Prepared by distilling pure Fluorspar (Calcic Fluoride) in a state of fine powder with Sulphuric Acid. As the acid dissolves glass, the distillation must be performed in leaden or platinum vessels, and the acid can only be preserved in bottles of the same, or in bottles made of gutta percha. It should be purchased from the manufacturing chemists.

Tests.—Place a drop of the aqueous solution on a slip of glass, let it remain a few minutes, then wash it off, and hold the glass so that the eye may glance over the polished surface, when the spot where the liquid was will be found to have entirely lost its polish, some of the glass having been dissolved.

Preparation.—An aqueous solution of 1 in 10. Water must be used for making the first three dilutions, and all these must be kept in gutta-percha bottles.

Reference to Hom. Proving.—Transactions of Amer. Inst., vol. i.

Proper forms for dispensing.—*Below* 3, *watery Solution only.* 4, *dilute Tincture.* 5 *and upwards, Tincture, Pilules, or Globules.*

ACIDUM HYDROCYANICUM.

Prussic Acid. HCN.

Obtained by distilling yellow Prussiate of Potash with Sulphuric Acid. The process given by the British Pharmacopœia of 1867 is as follows:

Take of

Yellow Prussiate of Potash .	$2\frac{1}{4}$ ounces;
Sulphuric Acid	1 fluid ounce;
Distilled Water	30 fluid ounces, or a sufficiency.

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Dissolve the Prussiate of Potash in 10 ounces of the water, then add the Sulphuric Acid, previously diluted with 4 ounces of the water and cooled. Put the solution into a flask or other suitable apparatus of glass or earthenware, to which are attached a condenser and a receiver arranged for distillation; and having put 8 ounces of distilled water into the receiver, and provided sufficient means for keeping the condenser and receiver cool, apply heat to the flask, until by slow distillation the liquid in the receiver is increased to 17 fluid ounces. Add to this 3 ounces of distilled water, or as much as may be sufficient to bring the acid to the required strength, so that 100 grains (or 110 minims) of it, precipitated with a solution of Argentic Nitrate, shall yield 10 grains of dry Cyanide of Silver.

Characters and Tests.—A colourless liquid, with a strong peculiar odour. Sp. gr. 997. It gives no precipitate with Barytic Chloride, but with Argentic Nitrate it gives a white precipitate entirely soluble in boiling concentrated Nitric Acid. Treated with a minute quantity of Sulphate or Persulphate of Iron, afterwards with Potass, and finally acidulated with Hydrochloric Acid, it forms Prussian Blue. 270 grains of it rendered alkaline by the addition of solution of Soda, requires 1000 grain measures of the volumetric solution of Nitrate of Silver to be added before a permanent precipitate begins to form, which corresponds to 2 per cent. of the real acid.

Preparation.—The officinal acid of the British Pharmacopœia is the strongest that should be dispensed. Equal measures of the officinal acid and rectified spirit will make the first centesimal dilution.

Reference to Hom. Proving.—Hartlaub and Trinks.

Proper forms for dispensing.—*Below* 3^{x}, *Tincture only. 2 and upwards, Tincture, Pilules, or Globules.*

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ACIDUM MURIATICUM.

Present name.—Hydrochloric Acid. HCl.

The process for preparing this should be that recommended in the British Pharmacopœia of 1867.

Take of

Chloride of Sodium, dried	.	48 ounces;
Sulphuric Acid . .	.	44 fluid ounces;
Water	.	36 fluid ounces;
Distilled Water . .	.	50 fluid ounces.

Pour the Sulphuric Acid slowly into 32 ounces of the water, and when the mixture has cooled add it to the Chloride of Sodium previously introduced into a flask having the capacity of at least one gallon. Connect the flask by corks and a bent glass tube with a three-necked wash-bottle, furnished with a safety tube, and containing the remaining 4 ounces of the water; then, applying heat to the flask, conduct the disengaged gas through the wash-bottle into a second bottle containing the distilled water, by means of a bent tube dipping about half an inch below the surface, and let the process be continued until the product measures 66 ounces, or the liquid has acquired a specific gravity of 1·16. The bottle containing the distilled water must be kept cool during the whole operation.

Characters and Tests.—Colourless, strongly acid, emitting white vapours having a very pungent odour. Evaporated to dryness it leaves no residue; it gives a curdy white precipitate with Argentic Nitrate, soluble in excess of Ammonia, insoluble in Nitric Acid. 114·8 grains by weight, mixed with half an ounce of distilled water, requires for neutralization 1000 grain measures of the volumetric solution of Soda. When diluted with 4 times its volume of distilled water it gives no precipitate with Barytic Chloride, is not discoloured by Sulphuretted

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Hydrogen, or Potassic Sulphocyanide, and does not tarnish bright copper foil when boiled in it.

Preparation.—As this solution contains 31·8 per cent. of the pure acid, 10 minims mixed with 21 minims of distilled water will make the 1^{x} dilution. In diluting, distilled water only should be used up to the 3, and then dilute alcohol for the 4, and after that rectified spirit.

Reference to Hom. Proving.—Chr. Kr., vol. iv.

Proper forms for dispensing.—*Below* 3, *watery Solution only.* 4, *dilute Tincture.* 5 *and upwards, Tincture, Pilules, or Globules.*

ACIDUM NITRICUM.

Nitric Acid. HNO_3.

Prepared from Potassic Nitrate, by distillation with Sulphuric Acid and water. It may be obtained from the manufacturing chemists of the strength ordered by the British Pharmacopœia, which contains 70 per cent. of the pure acid.

Characters and Tests.—A colourless liquid, sp. gr. 1·420, emitting powerfully acrid fumes. Evaporated to dryness it leaves no residue; poured over copper filings, dense red vapours are immediately formed; but if the acid be mixed with an equal volume of water and then added to the copper, it gives off a colourless gas, which becomes orange-red when mixed with air. Diluted with 6 times its volume of distilled water, it gives no precipitate with Barytic Chloride or Argentic Nitrate; 90 grains by weight mixed with half an ounce of distilled water requires 1000 grain measures of the volumetric solution of soda for neutralization.

Preparation.—10 minims mixed with 60 minims of distilled water will make the 1^{x} dilution. Distilled water

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must be used up to 3, and the dilute alcohol for the 4, after which rectified spirit should be employed.

Reference to Hom. Proving.—Chr. Kr., vol. iv.

Proper forms for dispensing.—*Below* 3, *watery Solution only.* 4, *dilute Tincture.* 5 *and upwards, Tincture, Pilules, or Globules.*

ACIDUM OXALICUM.

Oxalic Acid. $H_2C_2O_4$, $2H_2O$.

Prepared by oxidizing sugar or starch by the action of Nitric Acid and heat. It can be readily obtained from the manufacturing chemists, and should be purified by solution in distilled water and re-crystallization.

Characters and Tests.—Colourless prismatic crystals, strongly acid, dissolving freely in water. Heated in a test tube with strong Sulphuric Acid, it dissolves with effervescence, evolving Carbonic Oxide and Carbonic Acid, the former of which burns with a blue flame on approaching the mouth of the tube to a flame. Heated in a dry tube, it is entirely converted into vapour, a part of which condenses on the sides of the tube in fine transparent needles. Its solution in water gives a white precipitate with Argentic Nitrate, soluble in dilute Nitric Acid. A strong solution gives with Barytic Nitrate, on stirring with a glass rod, a granular precipitate, soluble in dilute Nitric Acid.

Preparation.—Solution in rectified spirit 1 in 10.

Reference to Hom. Proving.—Transactions of Amer. Institute, vol. i.

Proper forms for dispensing.—1^x *and upwards, Tincture, Pilules, or Globules.*

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ACIDUM PHOSPHORICUM.

Present name.—Hydric Phosphate. H_3PO_4.

Phosphoric Acid.

Hahnemann directs this to be prepared by the action of Sulphuric Acid on calcined bones. It can be obtained readily from the manufacturing chemists.

Characters and Tests.—A colourless, transparent, glassy solid, very soluble in water, having a sour taste and strongly acid reaction. Its solution gives a canary-yellow precipitate with Argentic Nitrate, which is soluble in Ammonia and in diluted Nitric Acid. It is not precipitated by Hydrosulphuric Acid, Barytic Chloride, Argentic Nitrate with excess of Nitric Acid, or solution of Albumen. The 1 in 10 watery solution mixed with an equal volume of pure Sulphuric Acid and introduced into a solution of Ferrous Sulphate, does not communicate a dark colour. The same solution mixed with an equal volume of solution of Mercuric Chloride and heated, gives no precipitate.

Preparation.—The solution in water recommended by the British Pharmacopœia under the title of "Dilute Phosphoric Acid," contains 1 grain in 10 minims, and hence forms our 1^x preparation.

The first 2 dilutions should be made with distilled water, the 5^x with dilute alcohol, the 3 and following with rectified spirit.

Reference to Hom. Proving.—Chr. Kr., vol. v.

Proper forms for dispensing.—1^x *to* 2, *watery Solution only.* 5^x, *dilute Tincture.* 3 *and upwards, Tincture, Pilules, or Globules.*

ACIDUM SULPHURICUM.

Present name.—Hydric Sulphate. H_2SO_4.

Sulphuric Acid.

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Hahnemann recommends the Nordhaüsen or fuming Sulphuric Acid to be used, directing it to be redistilled in glass vessels. A very pure acid, however, can be obtained from the manufacturing chemists.

Characters and Tests.—Strong Sulphuric Acid is a colourless oily liquid, sp. gr. 1·843, evolving much heat on the addition of water, and when diluted gives a copious white precipitate with Barytic Chloride, insoluble in Nitric Acid. Evaporated in a platinum crucible, it leaves no residue. Diluted with 6 times its volume of diluted water, no white precipitate appears. Neither does it give any precipitate with Hydrosulphuric Acid. When a solution of Ferrous Sulphate is poured gently on its surface, no purple colour is developed where the two liquids unite.

Preparation.—The officinal acid of the British Pharmacopœia contains 79 per cent. of the anhydrous acid. Hence, 10 grains by weight mixed with sufficient distilled water to measure 80 minims will constitute our 1^{x} preparation. The first 3 dilutions should be made with distilled water, 4 with dilute alcohol, and the 5 and following dilutions with rectified spirit.

Reference to Hom. Proving.—Chr. Kr., vol. v.

Proper forms for dispensing.—*Below* 3, *watery Solution only.* 4, *dilute Tincture.* 5 *and upwards, Tincture, Pilules, or Globules.*

ACONITE.

Aconitum Napellus. *Nat. ord.*, RANUNCULACEÆ.

Fig.—Flora Hom., pl. 1.

Common Aconite, Monkshood, or Wolfsbane. *For. names:* German, *Eisenhut, Sturmhut;* French, *Aconit. Napel;* Italian, *Napello;* Spanish, *Napello.*

Habitat.—Moist pastures, thickets and waste places, &c.,

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in mountainous districts, in Central and Southern Europe, and Russian and Central Asia, extending northward into Scandinavia. In Britain probably introduced, but apparently wild in some shady places in Western England and South Wales.

Flowering time.—June to August.

Parts employed.—The leaves, flowering tops, and the root.

Characters.—Leaves smooth, palmate, divided into five deeply cut wedge-shaped segments, exciting slowly when chewed a sensation of tingling. Flowers numerous, irregular, deep blue, in dense racemes.

Time for collecting.—When about one third of the flowers have expanded.

N.B.—The cultivated plant has been repeatedly used in place of the wild one, and it yields a very good tincture. It is needful, however, to select plants which have not been grown in rich luxuriant soil, and also such as retain all the characters of the wild plant unaltered by cultivation.

Preparation.—Tincture from freshly collected leaves or flowering tops, and from the fresh or dry root, using proof spirit in either case.

Reference to Hom. Proving.—R. A. M. L., i. Œst. Zeitsch. f. Hom., vol. i.

Proper forms for dispensing.—*φ to* 1, *Tincture only.* 3^{x} *and above, Tincture, Pilules, or Globules.*

ACTÆA RACEMOSA.

Cimicifuga racemosa. *Nat. ord.*, RANUNCULACEÆ.

Synonyms.—C. serpentaria, Actæa monogyna, Macrotys octreoides, Botrophis serpentaria.

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Fig.—Gray's Genera of American Plants, pl. 20.

Black Snake Root. *For. names:* German, *Scharzwurz;* French, *L'Actée;* Italian, *Actea;* Spanish, *Actea.*

Habitat.—In Canada, Georgia, and Western States.

Flowering time.—July.

Parts employed.—The root.

Characters.—Monogynous; carpels subglobose; seeds compressed. *Root* thick and knotted, with long fibres. *Stem* 3 to 8 feet high, glabous, furrowed, leafy near the middle. *Leaves* 3 ternate; racemes branching, 6 to 12 inches long. *Flowers* very fetid; sepals caducous, greenish-white, concave.

Time for collecting.—Autumn.

Preparation.—Tincture, using proof spirit.

Reference to Hom. Proving.—Dr. Hale's New Remedies, 2nd edition.

Proper forms for dispensing.—ϕ *to* 1, *Tincture only.* 3^{x} *and upwards, Tincture, Pilules, or Globules.*

ÆSCULUS HIPPOCASTANUM.

Æsculus Hippocastanum. *Nat. ord.*, SAPINDACEÆ.

Synonym.—Hippocastanum vulgare.

Fig.—Woodv. Med. Bot., t. 128.

Horse Chesnut. *For. names:* German, *Rosskastanie;* French, *Marronnier d'Inde.*

Habitat.—Unknown, probably native of both Northern India and North America. Abundant, as an introduced tree, in Britain and France.

Flowering time.—May.

Parts employed.—The ripe nut, deprived of its shell.

Characters. — Nuts ovoid, mahogany coloured, perfectly

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smooth and shining, with a large oval hilum, which is paler coloured and rough. Kernel white, and very astringent to the taste (very similar in general appearance to Spanish chesnuts, but generally brighter coloured).

Time for collecting.—September and October.

Preparation.—Tincture, using proof spirit.

Reference to Hom. Proving.—Dr. Hale's New Remedies, 2nd edition.

Proper forms for dispensing.—ϕ to 1, *Tincture only.* 3^x *and upwards, Tincture, Pilules, or Globules.*

ÆTHUSA.

Æthusa Cynapium. *Nat. ord.*, UMBELLIFERÆ.

Fig.—Flor. Hom., pl. 2.

Common Æthusa, Fool's Parsley, Garden Hemlock. *For. names:* French, *Ciguë des Jardins, Petite Ciguë;* German, *Garten-schierling;* Italian, *Cicuta minore;* Spanish, *Cicuta menore.*

Habitat. — A common weed, abundant throughout Europe.

Flowering time.—Summer and autumn.

Parts employed.—The whole fresh plant.

Characters. — *Leaves* dissected, bright green, emitting a nauseous smell when rubbed. *Umbels* on long peduncles, with partial involucres of 2 or 3 long linear tracts, turned downwards towards the outside of the umbels.

Time for collecting.—When in flower.

Preparation.—Tincture, using proof spirit.

Reference to Hom. Proving.—An. d. Hom. Klin., iv, 114.

Proper forms for dispensing.—ϕ *to* 1, *Tincture only.* 3^x *and upwards, Tincture, Pilules, or Globules.*

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AGARICUS.

Agaricus muscarius. *Nat. ord.*, CRYPTOGAMIA. FUNGI.

Synonyms.—Amanita muscaria, Agaricus imperialis.

Fig.—Flora Hom., pl. 3.

Fly Agaric, Bug Agaric. *For. names:* German, *Flieger-Schwamm;* French, *Fausse Orange;* Italian, *Amanita.*

Habitat.—In dry places, especially dry pine woods; Europe, Asia, and America. Not common in England, but abundant in some parts of Scotland.

Parts employed.—The entire fungus.

Characters.—*Pileus* 3 to 7 inches broad, convex, and sometimes depressed, of a rich orange-scarlet, but occasionally whitish, yellowish, or brown; margin striate. *Gills* white. *Stem* 4 to 9 inches high, half to 1 inch thick; sub-solid, bulbose.

Time for collecting.—Autumn.

Preparation.—1. Tincture from fresh fungus, after it has been carefully washed and the outer skin removed, using proof spirit. 2. Trituration from the dried fungus.

Reference to Proving.—Chr. Kr., ii.

Proper forms for dispensing.—*ϕ to* 1, *Tincture or Trituration.* 3^x *and upwards, Tincture, Pilules, or Globules.*

AGNUS CASTUS.

Vitex Agnus Castus. *Nat. ord.*, VERBENACEÆ.

Synonym.—V. verticillata.

Fig.—Woodville's Med. Bot., vol. ii, pl. 137.

The Chaste Tree. *For. names:* German, *Keusch-lamm, Mönchs-pfeffer;* French, *Gattilier commun.*

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Habitat.—The shores of the Mediterranean, Provence, and Greece; on sandy spots, and at the foot of rocks.

Flowering time.—July to September.

Parts employed.—The ripe berries, fresh or dry.

Characters.—A bush from 3 to 5 feet high, much branched. *Leaves* opposite, petiolate, digitate, 5—7 partite; colour dark green on upper, greyish on under surface, with a very strong smell. *Flowers* numerous, blue or purple, in long terminal spikes. *Berries* somewhat like a peppercorn.

Time for collecting.—When in flower and seed.

Preparation.—Tincture, using proof spirit.

Reference to Hom. Proving.—Stapf's Additions.

Proper forms for dispensing.—*ϕ to* 1, *Tincture only.* 3^{x} *and upwards, Tincture, Pilules, or Globules.*

ALLIUM CEPA, or CEPA.

The Common Onion. *Nat. ord.*, LILIACEÆ.

For. names: German, *Zwiebel;* French, *Oignon;* Italian, *Cipolla;* Spanish, *Cebolla.*

Parts employed.—The mature bulb.

Characters.—Dr. Hering, who proved this, says nothing about the variety of the cultivated onion which he used, but recommends "the red, largest, and strongest to be selected, and, if possible, not raised from ground which has been cultivated for centuries."

Time for collecting.—Autumn.

Preparation.—Tincture, using proof spirit, 1 to 20 parts of the dry material.

Reference to Hom. Proving.—Hering's Amer. Arzneipr.

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Proper forms for dispensing.—ϕ *to* 1, *Tincture only.* 3^{x} *and upwards, Tincture, Pilules, or Globules.*

ALLIUM SATIVUM.

Nat. ord., LILIACEÆ.

Garlic. *For. names:* German, *Knoblauch;* French, *Ail;* Italian, *Aglio;* Spanish, *Ajo.*

Parts employed.—The mature bulb.

Characters.—This well-known culinary plant is cultivated everywhere. The bulb consists of several ovato-oblong, pointed, somewhat curved little bulbs, not unlike claws, which are enclosed in one common dry membrane, forming a large oval bulb.

Preparation.—Tincture, using proof spirit in the proportion of 1 to 20, so as to exhaust the magma as much as possible.

Reference to Hom. Proving.—Marcy and Peters' New Mat. Med.

Proper forms for dispensing.—ϕ *to* 1, *Tincture only.* 3^{x} *and upwards, Tincture, Pilules, or Globules.*

ALOË.

Aloe Socotorina. *Nat. ord.*, LILIACEÆ.

Fig.—Steph. and Chr., iii, 110.

Common Aloes. *For. names:* German, *Aloe;* French, *Aloës;* Italian, *Aloë;* Spanish, *Aloe.*

The inspissated juice of the leaf of one or more undetermined species of Aloe, produced chiefly in the Island of Socotra.

Characters.—In reddish-brown masses, opaque, or trans-

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lucent at the edges; breaks with an irregular or smooth and resinous fracture; has a bitter taste, and a strong but fragrant odour; dissolves entirely in proof spirit, and during the solution exhibits, under the microscope, numerous minute crystals.

Preparation.—Tincture, using proof spirit.

Reference to Hom. Proving.—Hering's Amer. Arzneipr.

Proper forms for dispensing.—*ϕ to* 1, *Tincture only.* 3^{x} *and above, Tincture, Pilules, or Globules.*

ALUMEN.

Present name.—Aluminic and Potassic Sulphate. $Al_2K_2(SO_4)(H_2O)_{24}$.

Common Alum. *For. names:* German, *Alaun;* French, *Alun;* Italian, *Allume;* Spanish, *Alumbre.*

Of late years the Ammonia Alum has largely taken the place of Potass Alum in commerce; but as the provings were made with the Potass salt, we must continue to use it.

Characters and Tests.—Colourless, transparent, crystalline masses, exhibiting the faces of the regular octohedron, and having an acid, sweetish, or astringent taste. Its watery solution gives with Potassic Hydrate a white gelatinous precipitate, which is soluble in an excess of Potash. An immediate precipitate with Barytic Chloride, and after some hours a crystalline precipitate with Tartaric Acid.

Preparation.—Solution in distilled water for the first 3 dilutions, then dilute Alcohol for 4, and afterwards rectified spirit.

Reference to Hom. Proving.—Marcy and Peters' New Mat. Med.

Proper forms for dispensing.—1^{x} *to* 3, *watery Solution*

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only. 4, *dilute Tincture only.* 5 *or upwards, Tincture, Pilules, or Globules.*

ALUMINA.

Present name.—Alumina. Al_2O_3.

Pure Clay. *For. names:* German, *Thonerde Alaunerde.*

This should be prepared by precipitating Ammonia Alum with Liquor Ammoniæ, and carefully washing the precipitate with distilled water; the washing should be continued until the water which has percolated through the precipitate gives no precipitate with Barytic Chloride, or any odour of Ammonia when mixed with Potassic Hydrate and boiled. The Alumina is then carefully dried and pulverized.

Characters.—A very fine white powder, soft to the touch, tasteless, infusible, forming a paste with water, but not dissolving in it.

Preparation.—Trituration.

Reference to Hom. Proving.—Chr. Kr., ii.

Proper forms for dispensing.—1^x *to* 3, *Trituration only.* 4, *dilute Tincture only.* 5 *and upwards, Tincture, Pilules, or Globules.*

ALUMINIUM.

Metallic Aluminium. Al.

A brilliant white silver-like metal, malleable and ductile, obtained by heating Aluminic Chloride with Metallic Sodium.

Preparation.—Trituration.

Boenninghausen is said to have used this, but no reference to any proving has been found.

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Proper forms for dispensing.—1[x] to 3, *Trituration only.* 4, *dilute Tincture only.* 5 *and upwards, Tincture, Pilules, or Globules.*

The salts formed by Alumina with Acetic, Malic, and Tartaric Acids are all readily soluble in water, and one or other of these, especially the Acetate, might be used instead of the trituration of the pure Alumina by those who prefer solutions to triturations.

AMBRA GRISEA.

Ambergris. *For. names:* German, *Graue Ambra;* French, *Ambre gris.*

This is now generally believed to be a morbid secretion from the liver of the spermaceti whale (*Physeter macrocephalus*). It has been extracted from the rectum of whales in the South Sea Fishery, but is usually found floating on the sea along the coasts of Coromandel, Japan, the Moluccas, and Madagascar. The most esteemed is that from Madagascar and Sumatra.

Characters.—Large opaque balls, rough to the touch, formed of concentric layers, friable, lighter than water, spongy, of a greyish-brown colour externally, traversed within by black and yellowish-red streaks, and full of whitish specks. There often occur in the interior, the beak, and other hard parts of different species of cuttlefish, especially *Sepia octop.*, and *S. moschata.* It has a strong odour, somewhat aromatic; when heated it softens like wax; it burns readily with a bright flame, leaving very little residuum. It is soluble in ether, and partially so in rectified spirit.

Preparation.—Trituration.

Reference to Hom. Proving.—R. A. M. L., vi.

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Proper forms for dispensing.—1^{x} *to* 3, *Trituration only.* 4, *dilute Tincture.* 5 *and upwards, Tincture, Pilules, or Globules.*

AMMONIACUM.

Dorema Ammoniacum. *Nat. ord.*, UMBELLIFERÆ.

Gum Ammoniac. *For. names:* German, *Ammoniak;* French, *Gomme Ammoniaque;* Italian, *Armoniaco;* Spanish, *Goma Ammoniaco.*

Habitat.—Persia.

Parts employed.—The gum resin which exudes from the stem.

Characters.—In tears or masses; the tears from 2 to 8 lines in diameter, pale cinnamon brown, breaking with a smooth, shining, opaque, white surface; the masses composed of agglutinated tears, hard and brittle when cold, but readily softened by heat. Has a faint odour, and a bitter, acrid, nauseous taste. Rubbed with water it forms a nearly white emulsion. It is soluble in ether, but not in alcohol.

Preparation.—Trituration.

Reference to Hom. Proving.—Marcy and Peters' New Mat. Med.

Proper forms for dispensing.—1^{x} *to* 3, *Trituration only.* 4 *dilute Tincture only.* 5 *and upwards, Tincture, Pilules, or Globules.*

AMMONIUM CARBONICUM.

Synonym.—Sesquicarbonate of Ammonia.

Present name.—Ammonic Carbonate. $2(NH_4CO_3)CO_2$.

Sal-volatile. *For. name:* Germ., *Flüchtiges Laugensalz.*

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A volatile and pungent Ammoniacal Salt, produced by submitting a mixture of Sulphate of Ammonia or Chloride of Ammonium and Carbonate of Lime to sublimation.

Characters and Tests.—In translucent crystalline masses, with a strong ammoniacal odour and alkaline reaction; soluble in cold water, more sparingly in spirit. It volatilises entirely when heated, and is readily dissolved by acids with effervescence. If diluted Nitric Acid be added to it in slight excess, and the solution be boiled, it will give no precipitate with Chloride of Barium or Nitrate of Silver. Fifty-nine grains dissolved in one ounce of distilled water will be neutralised by 1000 grain measures of the volumetric solution of oxalic acid.

20 grains of Carbonate of Ammonia } neutralise { 23½ grains Citric Acid, / 25½ grains Tartaric Acid.

Preparation.—A trituration has been recommended, but the great volatility of the substance renders such a preparation unsuitable. It should be dissolved in distilled water (1 in 10, as usual) and the 1 made with dilute alcohol, and afterwards rectified spirit should be used.

Reference to Hom. Proving.—Chr. Kr., ii.

Proper forms for dispensing.—1^{x} *and* 1, *Solution only.* 3^{x} *and upwards, Tincture, Pilules, or Globules.*

AMMONIUM CAUSTICUM.

Synonym.—Liquor Ammoniæ Fortior.

Present name.—Ammonic Hydrate. NH_4HO.

The strong solution of Ammoniacal Gas (NH_3) in water is directed by the British Pharmacopœia to be prepared as follows:

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Take of

Chloride of Ammonium, in coarse powder	3 pounds;
Slaked Lime	4 pounds;
Distilled Water	32 fl. ounces.

Mix the Lime with the Chloride of Ammonium, and introduce the mixture into an iron bottle placed in a metal pot surrounded by sand. Connect the iron tube, which screws air-tight into the bottle in the usual manner, by corks, glass tubes, and caoutchouc collars, with a Woulf's bottle capable of holding a pint; connect this with a second Woulf's bottle of the same size, the second bottle with a matrass of the capacity of 3 pints, in which 22 ounces of the distilled water are placed, and the matrass, by means of a tube bent twice at right angles, with an ordinary bottle containing the remaining 10 ounces of distilled water. Bottles 1 and 2 are empty, and the latter and the matrass which contains the 22 ounces of distilled water are furnished each with a siphon safety tube charged with a very short column of mercury. The heat of a fire, which should be very gradually raised, is now to be applied to the metal pot, and continued until bubbles of condensible gas cease to escape from the extremity of the glass tube which dips into the water of the matrass. The process being terminated, the matrass will contain about 43 fluid ounces of strong Solution of Ammonia.

Bottles 1 and 2 will now include, the first about 16, the second about 10 fluid ounces of a coloured ammoniacal liquid. Place this in a flask closed by a cork, which should be perforated by a siphon safety tube containing a little Mercury, and also by a second tube bent twice at right angles, and made to pass to the bottom of the terminal bottle used in the preceding process. Apply

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heat to the flask until the coloured liquid it contains is reduced to three fourths of its original bulk. The product now contained in the terminal bottle will be nearly of the strength of Solution of Ammonia, and may be made exactly so by the addition of the proper quantity of distilled water or of strong solution of Ammonia.

Characters and Tests.—A colourless liquid, with a characteristic and very pungent odour, and strong alkaline reaction. Sp. gr. 0·891. 52·3 grains by weight require for neutralisation 1000 grain measures of the volumetric solution of Oxalic Acid. One fluid drachm contains 15·83 grains of Ammonia, NH_3. When diluted with four times its volume of distilled water, it does not give precipitates with solution of Lime, Oxalate of Ammonia, Sulphide of Ammonium, or Ammonio-sulphate of Copper; and, when treated with an excess of Nitric Acid, is not rendered turbid by Nitrate of Silver or by Chloride of Barium.

Preparation.—4 minims of the Liquor Ammoniæ Fortior, British Pharmacopœia, mixed with 6 minims of distilled water, will form the 1^x dilution. Water should be used for making 1, then dilute alcohol up to 2, and afterwards rectified spirit.

Reference to Hom. Proving.—Marcy and Peters' New Mat. Med.

Proper forms for dispensing.—1^x *to* 2, *Solution only.* 5^x *and upwards, Tincture, Pilules, or Globules.*

AMMONIUM MURIATICUM.

Present name.—Ammonic Chloride. NH_4Cl.

Sal Ammoniac. ***For. name :*** German, ***Salmiac.***

May be formed by neutralising Hydrochloric Acid with

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Ammonia and evaporating to dryness. It is usually prepared by sublimation.

Characters and Tests.—In colourless, inodorous, translucent, fibrous masses, tough, and difficult to powder; soluble in water and in rectified spirit. Its aqueous solution, when heated with Caustic Potash, evolves Ammonia, and when treated with Nitrate of Silver forms a copious curdy precipitate. When heated it volatilises without decomposition, and leaves no residue.

Preparation.—Trituration or solution in rectified spirit for 1 and upwards.

Reference to Hom. Proving.—Chr. Kr., ii.

Proper form for dispensing.—1^{x} *to* 3, *Trituration only; or* 1 *and upwards, Tincture, Pilules, or Globules.*

The following Salts of Ammonia also deserve the attention of Homœopathists, but none of them have as yet been fully proved.

AMMONIUM ACETICUM.

Present name.—Ammonic Acetate. $NH_4C_2H_3O_2$.

Mindererus' Spirit.

Made by neutralising Ammonic Carbonate with Acetic Acid.

A notice will be found in Marcy and Peters' New Mat. Med.

Preparation.—Solution in distilled water.

AMMONIUM BENZOICUM.

Present name.—Ammonic Benzoate. $NH_4C_7H_5O_2$.

Prepared by dissolving Benzoic Acid in a watery solution of Ammonia, and crystallizing.

This has been recommended for gout, and to be used where Benzoic Acid is indicated.

reparation.—Solution in rectified spirit.

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AMMONIUM BROMIDUM.

Present name.—Ammonic Bromide. NH_4Br.

It is best to procure this from the manufacturing chemists.

Characters and Tests.—In colourless crystals, which become slightly yellow by exposure to the air, and have a pungent saline taste. May be sublimed unchanged by the application of heat. Readily soluble in water, less soluble in spirit. A solution of the salt in water, mixed with mucilage of starch and a drop of an aqueous solution of bromine or chlorine, does not exhibit any blue colour.

Supposed to act similarly to Kali Bromidum, but to be less depressing.

Preparation.—Solution in distilled water up to 1, then use dilute alcohol for 3^x, and afterwards rectified spirit.

AMMONIUM CITRICUM.

Present name.—Ammonic Citrate. $3(NH_4)C_6H_5O_7$.

Made by neutralising Citric Acid with strong solution of Ammonia.

A notice of this will be found in Marcy and Peters' New Mat. Med.

Preparation.—Solution in distilled water up to 3^x, then use dilute alcohol for 2, after that rectified spirit.

AMMONIUM IODIDUM.

Present name.—Ammonic Iodide. NH_4I.

Can be obtained from the manufacturing chemists in a state of purity.

It is sometimes found to agree with patients who cannot take Kali Iod. without suffering unpleasantly.

Preparation.—Solution in distilled water up to 2, then use dilute alcohol for 3, and afterwards rectified spirit.

AMMONIUM PHOSPHORICUM.

Present name.—Hydrodi-ammonic Phosphate. $2(NH_4)HPO_4$.

Made by neutralising Phosphoric Acid with strong solution of Ammonia.

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A notice of this is given in Marcy and Peters' New Mat. Med.

Preparation.—Solution in distilled water up to 2, then use dilute alcohol for 3, and afterwards rectified spirit.

AMMONIUM SUCCINATUM.

Present name.—Ammonic Succinate. $2(NH_4)C_4H_4O_4$.

Can be made by neutralising Succinic Acid with solution of Ammonia.

This has not been proved, but there are reasons for believing that it acts on the nervous system, and would prove useful in hysteria, for which Amber (Succinum) long held a reputed virtue.

Preparation.—Solution in distilled water up to 2, then use dilute alcohol to 3, and afterwards rectified spirit.

AMMONIUM TARTARICUM.

Present name.—Ammonic Tartrate. $2(NH_4)C_4H_4O_6$.

Can be made by neutralising Tartaric Acid with solution of Ammonia.

This has not yet been proved, but is frequently used as a cooling saline.

Preparation.—Solution in distilled water up to 2, then use dilute alcohol to 3, and afterwards rectified spirit.

ANACARDIUM.

Semecarpus Anacardium. *Nat. ord.*, ANACARDIACEÆ.

Synonyms.—Anacardium officinarum, Anacardium orientale.

Fig.—Flora Hom., pl. 4.

Marking-nut Tree. *For. names:* German, *Elephantem Læusebaum, Anacardien Baum;* French, *Anacardien;* Italian, *Anacardos;* Spanish, *Anacard.*

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Habitat.—Dry mountainous forests in Asia.

Parts employed.—The juice contained in the cells under the external rind of the nut.

Characters.—A black heart-shaped nut, containing a corrosive resinous juice, in cells between the hard outside shell and the sweet kernel; the juice is at first pale and of the thickness of honey, but afterwards turns black, and dries up.

N.B.—It is very necessary to distinguish between the Marking-nut Tree, which is evidently the one Hahnemann described, and the Cashew Nut (*Anacardium occidentale*), which is often mistaken for it. It is quite possible that they may possess similar actions, but it is essential that homœopathists should use the precise species which has been employed in the proving.

Mode of preparing.—Triturations are made in the usual manner from the resinous juice.

Reference to Hom. Proving.—Ch. Kr., ii.

Proper forms for dispensing.—*Below* 3, *Trituration only.* 4, *dilute Tincture.* 5 *and upwards, Tincture, Pilules, or Globules.*

ANGUSTURA SPURIA. *Vide* BRUCEA ANTIDYSENTERICA.

ANGUSTURA.

Galipea officinalis. *Nat. ord.*, RUTACEÆ.

Synonyms.—Cusparia febrifuga, Bonplandia trifoliata.

Fig.—Flora Hom., pl. 5.

Angustura Bark, Cusparia. *For. names:* German, *An-*

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gustura rinde; French, *Ecorce d'Angusture*; Italian, *Angustura*; Spanish, *Quina de Carony*; Native name, *Orayuri*.

Habitat.—A tree of tropical America.

Part employed.—The bark.

Characters.—Flat pieces or incomplete quills, from 2 to 8 inches long, and between ½ inch and 1½ inch broad, ½ line to 3 lines in thickness, consisting of epidermis and proper bark. Outer surface dirty greyish-yellow, often speckled in the smaller pieces with lighter grey spots and elevations. Inner surface dark brown. Substance of the bark yellowish-brown. The transverse fracture is smooth, and somewhat resinous in appearance. The powder is like that of Rhubarb. It has a peculiar odour, and a bitter, hot, aromatic taste.

Distinguished from false Angustura by its outer surface not being turned dark green, nor its fracture red, by Nitric Acid.

Mode of preparing.—Tincture, using dilute alcohol; but trituration is preferable.

Reference to Hom. Proving.—R. A. M. L., vi.

Proper forms for dispensing. 1^{x} *to* 3, *Trituration or Tincture only.* 4 *and upwards, Tincture, Pilules, or Globules.*

ANTHRAKOKALI.

The substance proved under this name is produced by the action of fused Potassic Hydrate upon a peculiar kind of pit-coal obtained at Fünfkirchen, in Hungary, and hence no other kind of coal should be used. The powder, which is black, greasy to the finger, and deliquescent, has a very complex chemical composition, the particulars of which have not yet been ascertained.

In preparing it, 7 parts by weight of Potassic Hydrate are fused in a polished iron vessel, and 5 parts by weight of

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very fine pulverized Fünfkirchen pit-coal is carefully stirred into it, and the vessel is then removed from the fire and the stirring continued until the mixture becomes solid, when it should be rapidly reduced to powder in a warm mortar, and preserved in well-stoppered bottles.

Test.—5 grains of the powder will yield a dark brown solution with 1 fluid ounce of water; so dark, indeed, that after all insoluble matter has subsided the solution is translucent only in thin layers.

Preparation.—Trituration up to 3.

Reference to Hom. Proving.—Marcy and Peters' New Mat. Med.

Proper forms for dispensing.—1^x *to* 3, *Trituration only.* 4, *dilute Tincture only.* 5 *and upwards, Tincture, Pilules, or Globules.*

ANTIMONIUM CRUDUM.

Synonym.—Stibium Sulphuretum Nigrum.

Present name.—Antimonious Sulphide. Sb_2O_3.

German, *Schwefelspiesglanz.*

This is the commonest ore of Antimony, and occurs abundantly in many countries; that found in Hungary is very pure, according to Büchner.

Characters and Tests.—Masses consisting of closely aggregated needles, having a metallic lustre, leaden grey colour inclining to steel-grey, which is unchanged in the streak. The needles are extremely brittle, and melt even in the flame of a candle, emitting a sulphurous smell. It dissolves slowly in boiling Hydrochloric Acid, evolving the odour of Hydrosulphuric Acid. If the solution be filtered and mixed with water it generally gives an orange-red precipitate.

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Preparation.—Having ascertained the absence of all other metals, especially Iron and Arsenic, in the native sulphuret, it is to be reduced to an impalpable powder by grinding with water on a hard stone, and from this powder, carefully dried, triturations are made in the usual way.

Reference to Hom. Proving.—Chr. Kr., i.

Proper forms for dispensing.—1^{x} *to* 3, *Trituration only.* 4, *dilute Tincture only.* 5 *and upwards, Tincture, Pilules, or Globules.*

ANTIMONIUM TARTARICUM.

Synonym.—Antimonii Potassio-tartras, Tartarus Emeticus.

Present name.—Potassio-antimonic Oxytartrate. $KSbC_4H_4O_7H_2O$.

The British Pharmacopœia gives the following process for making this:

Take of

Oxide of Antimony	5 ounces;
Acid Tartrate of Potash, in fine powder .	6 ounces;
Distilled Water	2 pints.

Mix the Oxide of Antimony and Acid Tartrate of Potash with sufficient distilled water to form a paste, and set aside for twenty-four hours. Then add the remainder of the water, and boil for a quarter of an hour, stirring frequently. Filter, and set aside the clear filtrate to crystallise. Pour off the mother liquor, evaporate to one third, and set aside, that more crystals may form. Dry the crystals on filtering paper at the temperature of the air.

Characters and Tests.—In colourless transparent crystals, exhibiting triangular facets, soluble in water, and less so in

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proof spirit. It decrepitates and blackens upon the application of heat. Its solution in water gives with Hydrochloric Acid a white precipitate, soluble in excess, and which is not formed if Tartaric Acid be previously added. Twenty grains dissolve without residue in a fluid ounce of distilled water at 60°, and the solution gives with Sulphuretted Hyrdogen an orange precipitate, which, when washed and dried at 212°, weighs 9·91 grains.

Preparation.—The 1^{x}, when required, must be a trituration, but its solubility in water admits of 1 being a solution. Dilute alcohol may be used after 2, and rectified spirit from 3 upwards.

Reference to Hom. Proving.—Arch., iii.

Proper forms for dispensing.—1^{x}, *Trituration only.* 1 *to* 5^{x}, *Solution only.* 3 *and upwards, Tincture, Pilules, or Globules.*

Other Salts of Antimony:

ANTIMONIUM MURIATICUM.

Present name.—Antimonious Chloride. $SbCl_3$.

In the solid form, as Butter of Antimony, this was formerly much used as a caustic to unhealthy ulcers, and supposed to act specifically as well as locally. It deserves a proving.

ANTIMONIUM OXIDATUM.

Present name.—Antimonious Acid. Sb_2O_3.

This, triturated with Calcic Phosphate, constitutes the Antimonial Powder of the British Pharmacopœia, so much used as a febrifuge. It also deserves a proving.

ANTIMONIUM SULPHURETUM AUREUM.

Synonym.—Antimonii Oxysulphuretum.

This consists of Antimonium Crudum in a hydrated form, mixed with a variable quantity of Antimonious Oxide. Some years ago this was recommended as very useful in chronic inflammation of the fauces and throat. It has not been regularly proved.

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APIS MELLIFICA.

Class, INSECTA; *Ord.*, HYMENOPTERA; *Section*, ACULEATA; *Subsection*, MELLIFERA; *Family*, APIDÆ.

The Common Hive Bee.

The part employed is the poison emitted from the sting of the bee when enraged. There is much difference of opinion as to how it should be procured. Dr. Hering recommends seizing the live bee with a pair of forceps, and receiving the ejected poison on a piece of sugar. Dr. Marcy suggests catching the bees and plunging them into dilute alcohol. The following plan is perhaps the easier, and has been found practically to yield an efficient tincture. Take a clean, wide-mouthed, stoppered bottle, and, standing by the side of a bee-hive in full work, catch bees one by one as they emerge from the hive by means of a pair of forceps (the early morning is the safest time for doing this); introduce them, as caught, into the bottle, where they become much irritated by their imprisonment and try vainly to sting the operator's hand through the glass. When a sufficient number have been secured, and while they are still enraged, introduce a few drops of Chloroform, and as soon as they are stupified shake them out of the bottle, cut off the posterior half of the abdomen with sharp scissors; place them in a mortar, pour over them a sufficiency of pure glycerine to cover them, and bruise them carefully till the whole is reduced to a pulp; return the pulp into the bottle, and carefully wash the mortar with proof spirit, transferring the washings also into the bottle, using in all three times as much proof spirit by measure as the glycerine employed. Put in the stopper and let the parts macerate for several days, shaking repeatedly, so that any of the poison which has been ejected

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against the glass may be washed into the spirit. Afterwards filter the tincture, but do not press the pieces of bee.

It is impossible to ascertain the strength of this preparation, but it should be marked ϕ, being the strongest that is likely to be required.

Test.—If well prepared, it will cause an erythematous patch of about the size of a shilling when the skin is pricked by a needle previously dipped in the tincture.

Reference to Hom. Proving.—Americ. Arfneipruf., i.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Pilules, or Globules.*

APOCYNUM CANNABINUM.

Nat. ord., APOCYNACEÆ.

Synonym.—Apocynum pubescens.

Fig.—Hooker, Flor. Bot. Amer., tab. cxxxix.

Dogsbane, Indian Hemp.

Habitat.—Canada, Lake Huron.

Part employed.—The root.

Characters.—It is a perennial plant. *Stems* herbaceous, erect, branching, of a brown colour, and 2 or 3 feet in height. *Leaves* opposite, ovate, oblong, acute at both ends, and somewhat downy beneath. *Cymes* pedunculate, many-flowered and pubescent. *Corolla* small and greenish, with a tube not longer than the calyx, and with an erect border. *Pod* or follicle from 3 to 5 inches long, and resembles the pods of the *Asclepias syriaca*, or common silk-weed, but is much smaller.

Preparation.—Tincture, using proof spirit.

Reference to Hom. Proving.—Dr. Hale's New Remedies, 2nd edit.

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Proper forms for dispensing.—ϕ *to* 1, *Tincture only*; 3^x *and upwards, Tincture, Pilules, or Globules.*

ARGENTUM METALLICUM.

Synonym.—Argentum foliatum.

Silver. Ag.

The Silver used must be chemically pure, and hence it is best to prepare it from the purified nitrate by precipitation with Hydrochloric Acid, and then fusing the carefully washed and dried chloride with anhydrous Sodic Carbonate. The metal can then be rubbed down to powder with water on a hard stone. It may also be obtained in the form of powder by precipitation from a solution of the purified nitrate by Ferrous Sulphate and very careful washing.

Preparation.—Trituration.

Reference to Hom. Proving.—R. A. M. L., iv. Œst. Zeitsch. f. Hom., ii.

Proper forms for dispensing.—1^x *to* 3, *Trituration only.* 4, *dilute Tincture only.* 5 *and upwards, Tincture, Pilules, or Globules.*

ARGENTUM NITRICUM.

Present name.—Argentic Nitrate. $AgNO_3$.

Lunar Caustic.

The British Pharmacopœia gives the following directions for preparing this:

Take of

Purified Silver	. . .	3 ounces;
Nitric Acid	. . . .	$2\frac{1}{2}$ fluid ounces;
Distilled Water	. . .	5 fluid ounces.

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Add the Nitric Acid and the water to the Silver in a flask, and apply a gentle heat till the metal is dissolved. Decant the clear liquor from any black powder which may be present, into a porcelain dish, evaporate, and set aside to crystallise; pour off the liquor, and again evaporate and crystallise. Let the crystals drain in a glass funnel, and dry them by exposure to the air, carefully avoiding the contact of all organic substances.

Characters and Tests.—In colourless tabular crystals, the primary form of which is the right rhombic prism; or in white cylindrical rods; soluble in distilled water and in rectified spirit. The solution gives with Hydrochloric Acid a curdy white precipitate, which darkens by exposure to light, and is soluble in solution of Ammonia. A small fragment heated on charcoal with the blow-pipe, first melts, and then deflagrates; leaving behind a dull white metallic coating. 10 grains dissolved in 2 fluid drachms of distilled water give with Hydrochloric Acid a precipitate, which, when washed and thoroughly dried, weighs 8·44 grains. The filtrate when evaporated by a water-bath leaves no residue.

Preparation.—A solution of 1 in 10 in distilled water; and for dilution continue to use distilled water up to 3, then use dilute alcohol for 4, and afterwards rectified spirit. The salt ought not to be prepared as a trituration, on account of its action on organic matter.

Reference to Hom. Proving.—R. A. M. L., iv. Œst. Ztsch. f. Hom., ii.

Proper forms for dispensing.—*Below* 3, *watery Solution only.* 4, *dilute Tincture only.* 5 *and upwards, Tincture, Pilules, or Globules.*

Other compounds of Silver.

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ARGENTUM AMMONIO-CHLORIDUM.

This is a solution of Argentic Chloride in excess of Ammonia. A notice of it occurs in *Marcy and Peters' New Mat. Med.*

Preparation.—Solution in distilled water.

ARGENTUM MURIATICUM.

Present name.—Argentic Chloride. AgCl.

A white powder, prepared by precipitating Argentic Nitrate with Hydrochloric Acid, washing carefully, and drying, both of which processes must be done in the dark or in yellow light, to prevent the substance becoming dark-coloured. No proving of this has yet been published, but an account of its use is given in *Marcy and Peters' New Mat. Med.*

Preparation.—Trituration, which must be kept in the dark.

ARGENTUM HYDROCYANICUM.

Present name.—Argentic Cyanide. AgCN.

Prepared by precipitating a solution of Argentic Nitrate by Potassic Cyanide, and washing the precipitate with the same precautions as those named under Argentic Chloride. It is a white powder. No proving has been made, but there is a notice of its effects in *Marcy and Peters' New Mat. Med.*

Preparation.—Trituration, which must be kept in the dark.

ARGENTUM IODIDUM.

Present name.—Argentic Iodide. AgI.

Prepared by precipitating a solution of Argentic Nitrate by Iodide of Potassium. It is a bright yellow powder, in the washing and drying of which the same precautions must be taken as in the case of Argentic Chloride. No proving of this has been published, but a notice of its use is given in *Marcy and Peters' New Mat. Med.*

Preparation.—Trituration, which must be kept in the dark.

ARGENTUM OXYDATUM.

Present name.—Argentic Hydroxide. AgHO.

An olive-brown powder, prepared by precipitating a solution of Argentic Nitrate with Lime-water, washing the precipitate carefully, and drying over a vapour bath. No proving

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of this has been made, but it is admitted into the British Pharmacopœia as a reliable preparation.

Preparation.—Trituration.

ARGENTUM PHOSPHORICUM.

Present name.—Argentic Phosphate. Ag_3PO_4.

A yellow powder, prepared by precipitating a solution of Argentic Nitrate by Hydrodisodic Phosphate and washing the precipitate with all the precautions already mentioned. The well-known action of both the ingredients of this substance on the nervous system renders it worthy of a careful proving.

Preparation.—Trituration, which must be kept in the dark.

ARNICA.

Arnica Montana. *Nat. ord.*, Compositæ.

Fig.—Flora Hom., pl. 6.

Mountain Arnica, Leopard's Bane. *For. names:* German, *Berg Wohlverleih, Fallkraut;* French, *Arnique des Montagne;* Italian, *Arnica;* Spanish, *Arnica, Tobaco de Montana.*

Habitat.—Mountainous parts of middle and Southern Europe.

Flowering time.—July and August.

Parts employed.—Sometimes the entire fresh plant, but generally the dried rhizome and rootlets.

Characters.—*Rhizome* from 1 to 3 inches long and 2 or 3 lines thick, cylindrical, contorted, rough from the scars of coriaceous leaves, and furnished with numerous long slender fibres; has a peppery taste and peculiar odour. *Leaves* ovate, entire, sessile on the crown of the root. *Stem* 6 to 7 inches high, round, and unbranched, rising from the centre of the crown of leaves. *Flowers* large, rayed, and of a beautiful

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yellow. *Fruit* a hairy pappus. *Involucre* consisting of two rows of scales.

N.B.—The root soon loses some of its virtues by exposure to air; it should therefore be always kept in tightly closed barrels or boxes.

Preparations.—1. Tincture of fresh plant made in its native country, using proof spirit. 2. Tincture of dried flowers only, using proof spirit. 3. Tincture of the dry root, using proof spirit.

Reference to Proving.—Hahnemann's R. A. M. L., i.

Proper forms for dispensing.—*ϕ to* 1, *Tincture only.* 3^{x} *and upwards, Tincture, Pilules, or Globules.*

ARSENICUM ALBUM.

Present name.—Arsenious Acid. As_2O_3.

It may be obtained pure from the manufacturing chemists.

Characters and Tests.—A fine white powder, of a slightly sweetish taste and no smell. Heated in a dry tube it is entirely converted into vapour and is deposited on the cooler part of the tube as a white crystalline powder. Heated with charcoal it emits a strong garlic odour. It dissolves in Hydrochloric Acid and the solution gives the following precipitates. With Hydrosulphuric Acid it gives a yellow precipitate, soluble in Ammonic Carbonate. In neutral solutions Argentic Nitrate gives a yellow precipitate, easily soluble in weak acids.

Preparation.—Hahnemann directs one grain to be mixed with 6 fluid drachms of distilled water, in a glass vessel with a long narrow neck, and boiled until com-

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pletely dissolved, adding water from time to time to replace what has been vaporized; 6 fluid drachms of rectified spirit is then to be added, and afterwards dilute alcohol until the whole quantity measures 1000 minims, thus constituting the 3^x dilution, after which rectified spirit should be used. If a stronger preparation than 3^x is required, it should be made by trituration.

N.B.—There is a great difference in the solubility of different preparations of Arsenic, some dissolving by long boiling in less than 100 parts of water; nevertheless it is safer to adhere to Hahnemann's process, and not to attempt to make a liquid preparation stronger than 3^x.

Reference to Hom. Proving.—Chr. Kr., v. R. A. M. L., ii.

Proper forms for dispensing.—1^x *and* 1, *Trituration only.* 3^x, *Tincture only.* 2 *and upwards, Tincture, Pilules, or Globules.*

ARSENICUM METALLICUM.

Prepared by mixing Arsenious Acid with charcoal and decomposing it at a dull red heat; the oxygen unites with the carbon, and the metallic Arsenic passes off in vapour and is deposited in crystals on the cool part of the apparatus employed, which, when a small quantity only is required, may conveniently consist of a glass tube.

Characters and Tests.—A very pale steel-grey metal, of brilliant lustre, crystallizing when sublimed in rhombic octohedrons. The odour of its vapour is powerful, and strongly resembles that of Garlic. In a closed vessel it may be sublimed again and again without change.

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Preparation.—Trituration.

Reference to Hom. Proving.—North Amer. Hom. Journ., vol. i.

Proper forms for dispensing.—1^{x} *to* 3, *Trituration only.* 4, *dilute Tincture only.* 5 *and upwards, Tincture, Pilules, or Globules.*

Other compounds of Arsenic :

ARSENICUM CITRINUM.

Present name.—Arsenious Sesquisulphide. As_2S_3.

Orpiment, King's Yellow.

May be prepared by passing Hydrosulphuric Acid through a solution of Arsenious Acid in dilute Hydrochloric Acid, and washing the precipitate thoroughly.

Characters and Tests.—A bright yellow powder, insoluble in Hydrochloric Acid, but soluble in Ammonic Sulphide. Soluble in boiling Nitric Acid, with separation of Sulphur.

Preparation.—Trituration.

Reference to Hom. Proving.—R. A. M. L., ii.

ARSENICUM IODIDUM.

Present name.—Arsenious Iodide. AsI_3.

Prepared by direct combination of Metallic Arsenic with Iodine.

Characters and Tests.—Brick-red crystalline flakes, soluble in boiling water, giving off violet fumes when boiled with Nitric Acid.

Preparation.—Trituration.

A notice of the use of this compound, but no provings appeared in B. J. H., xxvi.

ARSENICUM RUBRUM.

Present name.—Arsenic Bisulphide. As_2S_2.

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Realgar.

A native mineral of an orange-red colour, answering to the same tests as Orpiment.

Preparation.—Trituration.

This is referred to, but no separate proving given, in *Marcy and Peters' New Mat. Med.*

ARSENICUM HYDROGENOSUM.

Present name.—Trihydride of Arsenic Arseniuretted Hydrogen. AsH_3.

Prepared by fusing Arsenic with its own weight of granulated Zinc, and decomposing the alloy with strong Hydrochloric Acid.

Characters and Tests.—A very poisonous colourless gas, with a strong garlic smell, burning with a blue flame if ignited, depositing metallic Arsenic on the sides of a cool tube held over the flame.

Preparation.—Solution in water, which absorbs one fifth of its volume, or the gas may be inhaled much diluted with air.

Reference to Hom. Proving.—Noack and Trinks.

ARSENITE OF POTASS.

Present name.—Tripotassic Arsenite. K_3AsO_3.

Preparation.—A solution in water, known as *Liquor Arsenicalis* in the British Pharmacopœia, called also Fowler's Solution. It has not been proved, but has been found to act similarly to *Arsenicum*, and is considered by some as a convenient form when 1 is given. The *Liquor Arsenicalis* contains 4 grains of Arsenious Acid to 1 fluid ounce, and hence it may be considered as 1.

ARSENIATE OF SODA.

Present name. — Hydrodisodic Arseniate. Na_2HAsO_4, $12H_2O$.

May be prepared by adding Sodic Carbonate to a hot solution of Arsenic Acid and allowing it to crystallize on evaporation. No proving of this has been made, but it has been found useful in certain forms of scrofula.

Preparation.—Solution in water up to 2, using dilute alcohol for 3 and afterwards rectified spirit.

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ARUM MACULATUM.

Arum Maculatum. *Nat. ord.*, ARACEÆ.

Fig.—Engl. Bot., t. 1298.

Cuckoo-pint, Wake Robin, Lords and Ladies. *For. names:* German, *Geflecter Aron, Aronswurzel;* French, *Gonet, Pied de Veau.*

Habitat.—In woods and thickets and under hedges, chiefly in central Europe, frequent in England and Ireland.

Flowering time.—Spring.

Parts employed.—The fresh root

Characters.—An acrid white tuber, brownish-yellow externally, having an acrid biting taste like pepper, and abundance of milky juice. It should always be procured with the herbaceous part attached, as it is otherwise difficult to identify.

Time for collecting.—Before the leaves are fully developed.

Preparation.—Tincture, using proof spirit.

Reference to Hom. Proving.—Arch., xiii.

Proper forms for dispensing.—*ϕ to* 1, *Tincture only.* 3^{x} *and upwards, Tincture, Pilules, or Globules.*

ASAFŒTIDA.

Narthex Assafœtida. *Nat. ord.*, UMBELLIFERÆ.

Synonyms.—Ferula Asafœtida. F. Persica. Asafœtida disgunensis.

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Fig.—Flor. Hom., pl. 7.

Asafœtida. *For. names :* German, *Stinkasant, Stechenkraut, Teufil's Dreck ;* French, *Asafétida ;* Italian, *Assafœtida, Zaffetica ;* Spanish, *Asa-fetida.*

Habitat.—Afghanistan and the Punjaub.

Parts employed.—The gum-resin, obtained by incision from the living root.

Characters.—In irregular masses, partly composed of tears, moist or dry. Colour, when fresh broken, opaque white, becoming purplish-pink, and ultimately dull yellow or pinkish-brown. Taste bitter acrid. Smell fœtid, alliaceous.

Time for collecting.—In spring, from plants about four years old, before the growth of the flowering stem.

Preparation.—Tincture, using rectified spirit.

Reference to Hom. Proving.—Jörg., i.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Pilules, or Globules.*

ASARUM.

Asarum Europæum. *Nat. ord.*, ARISTOLOCHIÆ.

Synonym.—Asarum vulgare.

Fig.—Flor. Hom., pl. 8.

Asarabacca, Fole's Foot, Hazelwort, Wild Nard. *For. names :* German, *Haselkraut, Hazelwurz ;* French, *Asaret, Bondelle, Orielle d' Homme ;* Italian, *Asaro.*

Habitat.—Mountainous woods in most parts of Europe.

Flowering time.—May.

Parts employed.—The entire plant.

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Characters.—A short creeping root stock, with two kidney-shaped leaves or long stalks; between them a single greenish-brown flower, about half an inch long, on a short recurved stalk. The leaves, as they fade, emit a peculiar pungent odour.

Time for collecting.—When in flower.

Preparation.—Tincture, using proof spirit.

Reference to Hom. Proving.—R. A. M. L., iii.

Proper forms for dispensing.—*φ to* 1, *Tincture only.* 3^{x} *and upwards, Tincture, Pilules, or Globules.*

ATROPINE and its Salts, *vide* after BELLADONNA.

AURUM METALLICUM.

Pure Gold, Gold Leaf.

The purest Gold Leaf, freed from all alloy, should be employed. A very excellent trituration can also be made by precipitating metallic Gold from the solution of the bichloride by a solution of Ferrous Sulphate, by which means the metal is obtained in the form of a dark cinnamon-brown colour, which shows a fine metallic lustre under pressure of the pestle.

Preparation.—Trituration.

Proper forms for dispensing.—1^{x} *to* 3, *Trituration only.* 4, *dilute Tincture only.* 5 *and upwards, Tincture, Pilules, or Globules.*

AURUM MURIATICUM.

Present Name.—Auric Chloride, or Trichloride of Gold. $AuCl_3$.

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Prepared by dissolving pure Gold in *Aqua Regia*, a mixture of Nitric and Hydrochloric Acids. The British Pharmacopœia gives the following process :

Take of

Fine Gold, reduced by a rolling machine to a thin lamina .	60 grains;
Nitric Acid	1½ fluid ounce;
Hydrochloric Acid . . .	7 fluid ounces;
Distilled Water	A sufficiency.

Place the Gold in a flask with the Nitric Acid and 6 fluid ounces of the Hydrochloric Acid, first mixed with 4 fluid ounces of the water, and digest until it is dissolved. Add to the solution the additional fluid ounce of Hydrochloric Acid, evaporate at a heat not exceeding 212° until acid vapours cease to be given off, and dissolve the Chloride of Gold thus obtained in 2 fluid ounces and 40 minims (1000 minims) of distilled water, thus forming 1^{x} solution, and keep in the dark.

Preparation.—Solution in distilled water up to 1, then using dilute alcohol for 2, and rectified spirit beyond 2.

Reference to Hom. Proving.—Chr. Kr., ii.

Proper forms for dispensing.—1^{x} *to* 2, *Solution only.* 5^{x} *and upwards, Tincture, Pilules, or Globules.*

Other preparations of Gold :

AURUM FULMINANS.

Present name.—Auric Nitride ? $(Au_2N)_2O$?

This powerful detonating compound, which has not yet been carefully analysed, is made by precipitating a solution of Auric Chloride with Ammonia. It is a reddish-yellow powder,

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which must be washed and cautiously dried at a moderate temperature. This preparation is noticed by Hahnemann in Chr. Kr., ii, but there is no regular proving.

Preparation (?).—It cannot be triturated, as it would explode, and it is not soluble.

AURUM ET SODÆ CHLORIDUM.

Synonym.—Aurum Muriaticum Natronatum.

Present name.—Auri-sodic Chloride. $NaCl, AuCl_3, 2H_2O$.

Made by mixing solutions of the Chlorides of Gold and Sodium and crystallization. It is a staple salt, which crystallizes in four-sided prisms. It has not been proved.

Preparation.—Solution in distilled water.

BAPTISIA.

Baptisia tinctoria. *Nat. ord.*, Leguminosæ.

Synonyms.—Sophora tinctoria, Podalyria tinctoria.

Fig.—Bigelow, Fl. Bost., 2nd edit., p. 170.

Wild Indigo.

Habitat.—Dry hills, Canada to Florida, and west to Mississippi.

Flowering time.—July to September.

Parts employed.—The bark of the root.

Characters.—*Stem* about 2 feet high, bushy. *Leaflets* $\frac{1}{2}$ to 1 inch long, rounded, and often emarginate at apex. *Flowers* rather small, yellow. It is said that this plant will yield a considerable quantity of Indigo.

Time for collecting.—In early spring, or when the leaf falls in autumn.

Preparation.—Tincture, using proof spirit.

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Reference to Hom. Proving.—Dr. Hale's New Remedies.

Proper forms for dispensing.—ϕ *to* 1, *Tincture only.* 3^x *and upwards, Tincture, Pilules, or Globules.*

BARYTA ACETICA.

Present name.—Baric Acetate. $Ba, 2C_2H_3O_2, 3H_2O$.

Prepared by dissolving Baric Carbonate in dilute Acetic Acid, and crystallizing the salt.

Characters and Tests.—A colourless salt, in oblique rhombic prisms, readily soluble in water, the solution giving an immediate white precipitate with a solution of Calcic Sulphate. If the salt itself is acted upon by Sulphuric Acid it emits fumes smelling of vinegar.

Preparation.—Solution in distilled water up to 3^x, then use dilute alcohol for 2, and after that rectified spirit.

Reference to Hom. Proving.—Chr. Kr., ii.

Proper forms for dispensing.—1^x *to* 2, *Solution only.* 5 *and upwards, Tincture, Pilules, or Globules.*

BARYTA CARBONICA.

Present name.—Baric Carbonate. $BaCO_3$.

Prepared by precipitating a soluble of pure Baric Chloride with Ammonic Carbonate, collecting the precipitate on a filter, washing, and carefully drying.

Characters and Tests.—A white powder, void of smell and taste, very sparingly soluble in water, but readily dissolved with effervescence by diluted Acetic and Hydrochloric Acid, and forming a colourless solution, which yields an immediate white precipitate with Calcic Sulphate.

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Preparation.—Trituration.

Reference to Hom. Proving.—Ch. Kr., ii.

Proper forms for dispensing.—1^x *to* 3, *Trituration only.* 4, *dilute Tincture only.* 5 *and upwards, Tincture, Pilules, or Globules.*

BARYTA MURIATICA.

Present name.—Baric Chloride. $BaCl_2,2H_2O$.

Prepared by dissolving Baric Sulphide in dilute Hydrochloric Acid, evaporation, and crystallization.

Characters and Tests.—Flat four-sided tabular crystals, very easily dissolved in water, and then yielding the ordinary tests for Baryta and Hydrochloric Acid.

Preparation.—Solution in distilled water up to 1, then use dilute alcohol for 2, and after that rectified spirit.

Reference to Hom. Proving.—Noack and Trinks.

Proper forms for dispensing.—1^x *to* 2, *Solution only.* 5^x *and upwards, Tincture, Pilules, or Globules.*

BELLADONNA.

Atropa Belladonna. *Nat. ord.*, SOLANACEÆ.

Synonym.—Solanum maniacum.

Fig.—Flora Hom., pl. 9.

Deadly Nightshade, Common Dwale. *For. names:* German, *Tollkirsche;* French, *Belladonne;* Italian, *Belladonna;* Spanish, *Belladona.*

Habitat.— Waste stony places in Southern Europe and West Central Asia. South of England, about old castles and ruins.

Flowering time.—Summer.

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Parts employed.—The entire plant.

Characters.—An erect, smooth, or slightly downy herb, with perennial root and branching stem. *Leaves* stalked, rather large, ovate, and entire, with a smaller one usually proceeding from the same point. *Flowers* solitary, on short peduncles in the forks of the stem or axils of the leaves. Corolla bell-shaped, pale purplish-blue, nearly 1 inch long, with five broad short lobes. *Fruit* a dark, black, shining, berry.

Time for collecting.—When beginning to flower, in June.

Preparation.—Tincture, using proof spirit.

Reference to Hom. Proving.—R. A. M. L., i.

Proper forms for dispensing.—*φ to* 1, *Tincture only.* 3^{x} *and upwards, Tincture, Pilules, or Globules.*

ATROPINE.

Present name.—Atropia. $C_{17}H\ NO_3$.

An alkaloid obtained from Belladonna, especially from the root. The process for preparing it is complex, and the substance is best obtained from the manufacturing chemists.

Characters and Tests.—Colourless acicular crystals, sparingly soluble in water, more readily in alcohol and in ether. Its solution in water has an alkaline reaction, gives a citron yellow precipitate with Auric Chloride, has a bitter taste, and powerfully dilates the pupil. It leaves no ash when burned with free access of air. It is an active poison.

Preparation.— Trituration, or solution in rectified spirit.

Reference to Hom. Proving.—Homöp. Klinik, Jahrg, 1855.

Proper forms for dispensing.—3^{x} *and upwards, Tincture, Pilules, or Globules.*

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ATROPIÆ SULPHAS.

Present name.—Atropic Sulphate. $C_{17}H_{23}NSO_6$?

The British Pharmacopœia directs this to be prepared as follows:

Take of

Atropia	120 grains;
Distilled Water	4 fluid drachms;
Diluted Sulphuric Acid	A sufficiency.

Mix the Atropia with the water and add the acid gradually, stirring them together until the alkaloid is dissolved and the solution is neutral. Evaporate it to dryness at a temperature not exceeding 100°.

Characters and Tests.—A colourless powder, soluble in water, forming a solution which is neutral to test paper, and when applied to the eye dilates the pupil as the solution of Atropia does. It leaves no ash when burned with free access of air.

Preparation.—Solution in distilled water up to 1, then use dilute alcohol up to 3^x, and after that use rectified spirit.

Reference to Hom. Proving.—Brit. Journ. of Hom., vol. xv.

Proper forms for dispensing.—1 *and* 3^x, *Solution only.* 2 *and upwards, Tincture, Pilules, or Globules.*

BERBERIS.

Berberis vulgaris. *Nat. ord.*, BERBERIDACEÆ.

Synonyms.—Berberis dumetorum, Spina acida.

Fig.—Flora Hom., pl. 10.

Common Barberry, Pipperidge-bush. *For. names:*

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German, *Sauerdorn;* French, *L'Epine vinette;* Italian, *Crespino;* Spanish, *Berberis.*

Habitat.—Hedges, thickets, and open woods, over the greater part of Europe.

Flowering time.—Spring or early summer.

Parts employed.—Small branches of the root, or the bark of the larger roots.

Characters.—A smooth pale green shrub, 6 or 8 feet high. *Branches* arched and hanging at the ends, furnished with three lobed thorns at the base of the tufts of leaves. *Leaves* alternate or clustered, ovate, sharply toothed. *Flowers* yellow, in elegant drooping racemes. *Fruit* small, oblong, red, berries containing two or three seeds.

Time for collecting.—Autumn, when the leaves are falling.

Preparation.—Tincture, using proof spirit.

Reference to Hom. Proving.—Journ. für A. M. L., i.

Proper forms for dispensing.—*ϕ to* 1, *Tincture only.* 3^x *and upwards, Tincture, Pilules, or Globules.*

BISMUTHUM.

Present name.—Bismuth Subnitrate. Bi_2O_3, $2HNO_3$.

The British Pharmacopœia gives the following process for preparing this:

Take of

Purified Bismuth, in small pieces .	2 ounces;
Nitric Acid	4 fluid ounces;
Distilled Water	A sufficiency.

Mix the Nitric Acid with 3 ounces of distilled water, and add the Bismuth in successive portions. When

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effervescence has ceased apply for ten minutes a heat approaching that of ebullition, and decant the solution from any insoluble matter that may be present. Evaporate the solution until it is reduced to 2 fluid ounces, and pour it into half a gallon of distilled water. When the precipitate which forms has subsided, decant the supernatant liquid, add half a gallon of distilled water to the precipitate, stir them well together, and after two hours decant off the liquid, collect and drain the precipitate in a calico filter, press it with the hands, and dry it at a temperature not exceeding 150°.

Characters and Tests.—A heavy white powder in minute crystalline scales, blackened by Sulphuretted Hydrogen; insoluble in water, but soluble in Nitric Acid mixed with half its volume of distilled water, forming a solution which poured into water gives a white precipitate. It forms with Sulphuric Acid diluted with an equal bulk of water a solution which is blackened by Sulphate of Iron. The Nitric Acid solution gives no precipitate with diluted Sulphuric Acid nor with solution of Nitrate of Silver.

Preparation.—Trituration.

Reference to Hom. Proving.—R. A. M. L., vi.

Proper forms for dispensing.—1^{x} *to* 3, *Trituration only.* 4, *dilute Tincture only.* 5 *and upwards, Tincture, Pilules, or Globules.*

BORAX.

Present name.—Sodic Biborate, Acid Borate of Sodium. $Na_2B_4O_7 10H_2O$.

It may be prepared pure by boiling together in atomic proportions Boracic Acid and Sodic Carbonate. It is, however, usually made by purifying the native salt *Tincal* by repeated crystallization.

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Characters and Tests.—In transparent colourless crystals, sometimes slightly effloresced, with a weak alkaline reaction; insoluble in rectified spirit, soluble in water. A hot saturated solution, when acidulated with any of the mineral acids, lets fall, as it cools, a scaly crystalline deposit (Boracic Acid), the solution of which in spirit burns with a green flame. 191 grains dissolved in 10 fluid ounces of distilled water require for saturation 1000 grain measures of the volumetric solution of Oxalic Acid.

Preparation.—Trituration for 1^x. Solution in distilled water for 1 and 3^x, dilute alcohol for 2. Rectified spirit for 3 and upwards.

Proper forms for dispensing.—1^x *Trituration only.* 1 *to* 5^x, *Solution only.* 3 *and upwards, Tincture, Pilules, or Globules.*

ACIDUM BORACICUM.

Present name.—Crystallized Boric Acid. HBO_2H_2O.

This is prepared by adding any of the mineral acids to a hot saturated solution of Sodic Biborate. It is deposited in crystalline scales on cooling.

Test.—A solution in alcohol burns with a green flame.

This has not been proved, but is noticed in B. J. H., vol. ii.

Preparation.—Solution in alcohol.

BOVISTA.

Lycoperdon bovista. *Nat. ord.*, Fungi.

Synonyms.—Lycoperdon globosum, Bovista nigrescens, Fungus ovatus.

Fig.—Flora Hom., pl. 11.

Puff-ball, Mollypuf, Puff-fist. *For. names:* German,

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Rauchpilz, Kugelschwamm; French, *Boviste, Vesse loup;* Italian, *Licoperdo;* Spanish, *Licoperdo.*

Habitat.—On dry meadows and downs in most parts of Europe.

Parts employed.—The entire fungus.

Characters.—Smooth globose, soft and yellowish-white when young, becoming yellow and then brown. Filled with a white cottony substance, which becomes brown, and contains when ripe an immense quantity of extremely fine brown-black powder.

Time for collecting.—August and September.

Preparation.—Trituration.

Reference to Hom. Proving.—Hartlaub and Trinks, iii.

Proper forms for dispensing.—1^{x} *to* 3, *Trituration only.* 4, *dilute Tincture only.* 5 *and upwards, Tincture, Pilules, or Globules.*

BROMIUM.

This will seldom be prepared on the small scale, it can be so readily purchased from the manufacturing chemists.

Characters and Tests.—A dark brownish-red, very volatile liquid, with a strong and disagreeable odour. Its specific gravity is 2·966. At the common temperature of the air it gives off red vapours, and at a temperature of 117° it boils. Agitated with solution of Soda in such proportion that the fluid remains very slightly alkaline, it forms a colourless liquid, which, if coloured by the farther addition of a small quantity of the Bromine, does not become blue on the subsequent addition of a cold solution of starch.

Preparation.—Pure Bromine should be kept under water in well-stoppered bottles, and the low attenuations should

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