

## HOW PERFUMERY IS MADE.



WHATEVER objections have been, or may be, urged against the use of perfumes, the fact remains that they are still largely used, and in all probability would be more so if they could be obtained at less cost. With alcohol at six shillings a quart, and the limited supply and consequent high price of perfumes, the outlay can never be inconsiderable; but it may be lessened by buying the ingredients separately, and mixing them at home, as neither expensive apparatus, nor extensive knowledge, nor manipulative skill is required in the ordinary work of perfume-making.

It is intended to describe here, concisely and clearly, the preparation of what are called "simple extracts or essences," and afterwards to show how these may be blended to produce what are known in the trade as "nosegays," "bouquets," or "handkerchief perfumes." The "simple essences" constitute the ground-work of perfumery; from them any of the many formulæ now easily obtainable can readily be prepared.

An indication of the probable cost—often wanting in connection with published formulæ—will be given. For obvious reasons, only the wholesale price of the materials used can be stated; but however small the quantities purchased, the cost should not exceed that given here by more than fifty per cent.

The necessary apparatus consists of a stock of glass-stoppered bottles, about twenty-ounce size, and costing fourteen shillings a dozen; a glass or enamelled funnel costing about threepence; and about threepennyworth of filtering paper.

The materials required are the perfumes and alcohol. The former are selected according to taste. The latter is the ingredient most largely used in perfumery, and by no means the least important. It is also known under the names of "rectified spirit," "spirit of wine," and "spiritus vinus rectificatus," or "S. V. R." The terms are all loosely applied. "Spirit of wine," legally, may be of any strength above forty-three over-proof; the rectified spirit of the Pharmacopœia is fifty-six over-proof; but a strength of sixty over-proof and upwards is best suited to the requirements of the perfumer. Brandy is, strictly speaking, the spirit of wine; but brandy, as ordinarily met with, cannot be used for two reasons: first, it is not strong enough; secondly, it is rarely pure. A respectable chemist, or a wholesale druggist, will supply alcohol sufficiently pure for about six shillings a quart, or twenty shillings a gallon if purchased in quantities of five gallons or upwards.

Alcohol serves two purposes in perfumery—(1) a solvent; (2) a diluent; and the two conditions upon which its value depends are—(1) a strength of about sixty over-proof; (2) freedom from empyreumatic or

other foreign odours. If not strong enough, its solvent powers will be too feeble; if not scentless, or nearly so, it will destroy the more delicate odours altogether. On no account be persuaded to buy methylated spirit. Before it can be used it must be purified, and to purify it involves a very serious breach of the law.

A few terms used in perfumery are so confusing that a word or two of explanation are necessary. "Extract," "essence," "spirit," and "tincture" are practically the same, viz., an alcoholic solution of a pleasant odour. A "tincture," strictly speaking, is an extract prepared by treating dry substances, such as musk, orris, &c., with alcohol; but in perfumery, at least, the distinction is not necessary. If the term "extract" alone were used to represent all these, there would be a great gain in simplicity without any loss through ambiguity. Some manufacturers, too, make a distinction between "essence of rose" (prepared from pomade), and "spirit of rose" (prepared from otto). A better way to distinguish them is to name the former "extract of rose pomade," and the latter "extract of rose." "Extract of violets" and "extract of orris" are terms sometimes applied to the same thing, but should be no longer so. A "pomade" is a fat or oil holding certain odours in solution. The more delicate odours are best collected in this way; and some cannot satisfactorily be collected in any other. The term "otto" is usually restricted to oil of roses, but it might with advantage be extended to all the essential oils. These oils are generally obtained by distilling the odoriferous substances with water. The oil distils over with the water, and then readily separates from it. "Simple essences" contain only one odour dissolved in alcohol; "bouquets" or "handkerchief perfumes" are mixtures of two or more "simple essences."

Perfumes are brought to the market in three states—(1) pomades, (2) oils, (3) the raw or natural state. The following are the odours ordinarily employed:—

*Pomades.*—Cassie, jasmine, jonquille, orange-flower, rose, tuberose, violet.

*Oils.*—Almond, bergamot, clove, citron, citronella, geranium, ilang (ylang), lavender, lemon, lemon-grass, Neroli petale, orange, patchouli, petit-grain, Portugal, rose ("otto"), rosemary, santal, verbena, vetiver.

*Raw Products (Vegetable).*—Benzoin, orris, storax, tonka, vanilla.

*(Animal).*—Ambergris, castor, civet, musk.

To prepare simple extracts from any of these is by no means a difficult task. Pomades are of four strengths, known as Nos. 6, 12, 18, and 24, the latter being the strongest, and most highly recommended.

Having obtained the pomade, it must be chopped as fine as possible, in the same manner as suet is chopped for kitchen use. It is then transferred to a bottle, the alcohol poured on it, and stood in a warm place for a month, with frequent shaking. It is

then passed through a filter to remove the undissolved fat. This fat should not be thrown away, but should be again treated with alcohol as before, and finally spread between folds of paper or linen, and placed in drawers, wardrobes, &c. The clear essence which passes through the filter should be kept in a well-stoppered bottle, and in a cool, dark place. One pound weight of pomade makes one pint of extract at a cost of about nine shillings and sixpence.

Extracts from raw substances are prepared in a similar way. These are sometimes pounded in a mortar, sugar or sand being added to assist in the process of subdivision. They are made of such a strength that a pint of the extract should cost from four to five shillings, with the exception of ambergris and musk extracts, which cost as much as forty-eight shillings a pint.

Extracts from oils are the most easily prepared. The proper proportions of oil and alcohol are placed together in a bottle and well shaken. They are at once ready for use, but, like the others, are best stored in a cool dark place until required. The cost varies considerably. A pint of the extract of ilang, rose-triple, or vetiver costs about fifteen shillings; the cost of the other extracts varies from seven and sixpence to three and sixpence.

Having prepared the simple extracts in the way directed, a great variety of odours may be imitated by judiciously mixing them. Those who are unable or unwilling to prepare the simple essences at home can purchase them at the druggists'; but there are many advantages attending the former method. The principal is that the quality and strength are to a certain extent guaranteed. Unfortunately, manufacturers are not agreed as to the strength of extracts; the consequence is that a formula which works well in the hands of one, if made up from the stock of another, will probably be disappointing in its result.

The objects of mixing or blending are—(1) to imitate at less cost an odour which, by reason of its scarcity, is expensive, or which cannot be satisfactorily prepared in the ordinary way; and (2) to produce new odours. The golden rule to be attended to in blending is to mix the ingredients in such proportions that no one of them shall predominate over the others to such an extent as to be readily discernible. It is the process of blending which has raised perfumery to the dignified position it now holds among the arts, and many new combinations may yet be prepared from the list of simple extracts.

A blended perfume may be regarded as consisting of three parts:—(1) Fleeting odours; (2) stable odours, or "fixers;" (3) a vehicle (alcohol) in which the odours are dissolved and diluted. The first give character and delicacy; the second, potency and permanency; the third, solution and economic distribution. Some odours are so volatile that their effect is soon entirely lost. To assist in detaining them the more stable odours are added. These stable odours, or "fixers," are to the perfumer what mordants are to the dyer. The best "fixers" are musk, vanilla, ambergris, storax, tolu, orris, vetiver, and benzoin,

choice being made of the one most compatible with the other ingredients in the mixture. Generally speaking, the fleeting delicate odours are met with in commerce as oils, or in pomades, the permanent and potent ones in the raw state. Ambergris is so permanent that washing will not remove it from a handkerchief.

In preparing a blend, the dry substances, if there are any, should first be macerated in alcohol the required length of time, as directed in the case of extracts of these substances; and after the undissolved portion is separated by filtration, the other extracts and the oils should be added to the clear solution. It is then made up with alcohol to the required bulk, and shaken thoroughly and frequently for a few days. If clear, it is ready for use; but properly blended perfumes improve by keeping in a cool and dark place.

Some perfumers are of opinion that the addition of a little water to the prepared blend improves it, as the oils, being thrown into a state of semi-solution, evolve a more natural aroma, while at the same time the pungency and volatility of the alcohol are reduced. Experience and taste must be our guides in this.

The following recipes are from the note-book of a manufacturer, and have been strongly recommended:

1. *Bouquet Essence*. Cost, 13s. a pint.

Extract of rose ("triple")	...	13 ounces.
" orris	...	5 "
" ambergris	...	2 "
Oil of bergamot	...	4 drachms.
" lemon	...	1 "

2. *Heliotrope*. Cost, 10s. 6d. a pint.

Extract of vanilla	...	7 ounces.
" rose pomade	...	6 "
" orange pomade	...	3 "
" violet pomade	...	3 "
" musk	...	½ ounce.
Oil of almonds (essential)	...	6 drops.
" rose	...	12 "

3. *Jonquille*. Cost, 10s. 3d. a pint.

Extract of jasmine pomade	...	7 ounces.
" orange pomade	...	4 "
" tuberose pomade	...	7 "
" vanilla	...	1 "
" storax	...	1 "
Oil of rose	...	7 drops.

4. *Lilac*. Cost, 11s. a pint.

Extract of tuberose pomade	...	13 ounces.
" orange pomade	...	6½ "
" civet	...	½ "
Oil of almonds (essential)	...	3 drops.
" rose	...	13 "

5. *New-Mown Hay*. Cost, 8s. 6d. per pint.

Extract of geranium	...	3 ounces.
" jasmine pomade	...	2 "
" orange pomade	...	2 "
" rose pomade	...	3 "
" violet pomade	...	2 "
" rose ("triple")	...	2 "
" tonquin	...	4 "
" vanilla	...	1 "
" civet	...	½ "

6. *Rondeletia*. Cost, 13s. a pint.

Oil of rose	...	20 drops.
" lavender (Mitcham)	...	100 "
" bergamot	...	50 "
" cloves	...	50 "

Musk, best grain ... ..	6 grains.
Ambergris ... ..	20 "
Alcohol ... ..	16 ounces.
Water (distilled) ... ..	3 "

7. *Rose (Tea)*. Cost, 10s. 3d. a pint.

Extract of rose ("triple") ... ..	3 ounces.
" rose pomade ... ..	7 "
" geranium ... ..	5 "
" santal ... ..	2½ "
" neroli ... ..	1 "
" orris ... ..	1 "
" storax ... ..	½ "
" musk ... ..	½ "

8. *Rose (White)*. Cost, 10s. 6d. a pint.

Extract of rose ("triple") ... ..	3 ounces.
" rose pomade ... ..	8½ "
" violet pomade ... ..	3 "
" cassie pomade ... ..	1½ "
" jasmine pomade ... ..	3 "
" patchouli ... ..	1 "
" storax ... ..	2 drachms.

9. *Spring-Flowers*. Cost, 12s. 3d. a pint.

Extract of rose ("triple") ... ..	2 ounces.
" rose pomade ... ..	6 "
" violet pomade ... ..	6 "
" cassie pomade ... ..	2 "
" jasmine ... ..	3 "
" musk ... ..	½ "
" ambergris ... ..	1 "
" bergamot ... ..	1 drachm.

10. *Stephanotis*. Cost, 11s. 9d. a pint.

White rose (No. 8) ... ..	12 ounces.
Extract of jasmine pomade ... ..	8 "
" musk ... ..	½ "

11. *West-End Bouquet*. Cost, 10s. 6d. a pint.

White rose (No. 8) ... ..	5 ounces.
Extract of violet pomade ... ..	5 "
" jasmine pomade ... ..	6 "
" cassie pomade ... ..	3 "
" musk ... ..	½ "

12. *Lavender Water*. Cost, 10s. a pint.

Oil of lavender (Mitcham) ... ..	10 drachms.
" rose ... ..	5 drops.

Extract of musk ... ..	½ ounce.
Alcohol ... ..	17 ounces.
Orange-flower water ... ..	2 "
Rose water ... ..	1 "

The quantities given above make approximately a pint of perfume.

Prepared perfumes are best distributed by means of a spray producer, and a simple one costing a few pence answers the purpose very well.

In conclusion, it is hardly necessary to add that great care should be taken to avoid waste; to preserve all insoluble residues for a second, or even a third extraction, if necessary. Spread between sheets of paper, these residues are highly effectual in perfuming drawers, dressing-cases, wardrobes, writing-cases, or other articles of furniture.

The following rules should not be forgotten:—1. Perfumes keep best in a cool and dark place. 2. Extracts made from oils are, with few exceptions, at once ready for use; extracts from pomades and raw substances require about a month's digestion. 3. Bottles should have well-fitting glass stoppers, and should always be rinsed with a little alcohol before using. 4. Buy only the best quality of everything, and at respectable houses. 5. Bouquet perfumes should be clear and free from liability to stain a white handkerchief. 6. Choose, therefore, pale-coloured oils, and new ones in preference to old. 7. In choosing a "bouquet" avoid recipes containing a great variety of ingredients; within consistent limits, the simpler the formula the better the result. 8. Extracts of castor, civet, and musk are very powerful, and should be used cautiously in blending. 9. All perfumes are sold by the pound and ounce avoirdupois.

1 lb. = 16 oz. = 7,000 grains; and 1 oz. = 8 drachms.\*  
In measuring extracts and liquids generally: 1 pint = 20 fluid ounces = 160 fluid drachms.

## HOME STUDY FOR GIRLS.

BY BARBARA FOXLEY, FORMERLY SCHOLAR OF NEWNHAM COLLEGE, CAMBRIDGE.



HOME STUDY is proverbially difficult. Of the many girls who leave school intending to pursue their studies, hardly one in ten carries out her intention.

No doubt there is many a useful home-daughter whose time is fully occupied in the details of domestic duties; others devote their time to philanthropic work; and some are so involved in a round of social engagements, that they have neither time nor thought for anything beyond. But there are many girls who do not belong to any of these classes—girls who have perhaps had a sound school education, and to whom neither the will nor the opportunity is wanting; yet, after a few spasmodic attempts they relapse into mere desultory reading, or abandon their efforts in despair. It is to such that I wish to give a few hints.

"If only I could go to college, I know I could study."

Yes, I have no doubt you could; but if that is out of the question for you, you must do what you can at home. Let us see what it is that college life really does for the student, and whether its favourable conditions are indeed so vastly superior to those under which you live.

"Well, I should, at any rate, be free from interruption."

I grant that in her own rooms, without any pressing duties, social or domestic, the student has a great advantage; but are you quite sure you cannot secure some time, however short, for your own work? You have

\* The avoirdupois ounce being divided into eight drachms (troy) causes confusion and inconvenience; but its adoption by the trade shows clearly the insufficiency of our present standard system of weights.