

vered with powdered chalk, heated to the temperature of the body. In this way, he assures us that he cured very many extensive burns in a few weeks, which, under the use of cooling applications, would have required as many months, or would have been altogether incurable.

CHAP. XXI.—DISTILLED WATERS:

IN the distillation of volatile oils, the water, as was observed in a foregoing section, imbibes always a part of the oil. The distilled liquors here treated of, are nothing but water thus impregnated with the essential oil of the subject; whatever smell, taste, or virtue is communicated to the water, or obtained in the form of watery liquor, being found in a concentrated state in the oil.

All those vegetables, therefore, which contain an essential oil, will give over some virtue to water by distillation: but the degree of the impregnation of the water, or the quantity of water which a plant is capable of saturating with its virtue, are by no means in proportion to the quantity of its oil. The oil saturates only the water that comes over at the same time with it: if there be more oil than is sufficient for this saturation, the surplus separates, and concretes in its proper form, not miscible with the water that arises afterwards. Some odoriferous flowers, whose oil is in so small quantity, that scarcely any visible mark of it appears, unless fifty or an hundred pounds or more are distilled at once, give nevertheless as strong an impregnation to water as those plants which abound most with oil.

Many have been of opinion, that distilled waters may be more and more impregnated with the virtues of the subject, and their strength increased to any assigned degree, by *cohobation*, that is, by re-distilling them repeatedly from fresh parcels of the plant. Experience, however, shews the contrary. A water skilfully drawn in the first distillation, proves, on every repeated one, not stronger, but more disagreeable. Aqueous liquors are not capable of imbibing above a certain quantity of the volatile oil of vegetables; and this they may be made to take up by one, as well as by any number of distillations: the oftener the process is repeated, the ungrateful impression which they generally receive from the fire, even at the first time, becomes greater and greater.

Those plants, which do not yield at first waters sufficiently strong, are not proper subjects for this process.

Most distilled waters, when first prepared, have a somewhat unpleasant smell, which, however, they gradually lose: it is therefore advisable to keep them for some days after their preparation in vessels but slightly covered; and not to cork them up until they lose that smell.

That the waters may keep the better, about one-twentieth part their weight of proof-spirit may be added to each after they are distilled. I have been informed by a respectable apothecary, that if the simple distilled waters be rectified by distilling them a second time, they will keep for several years without the addition of any spirit, which always gives an unpleasant flavour, and is often objectionable for other reasons.

Distilled waters are employed chiefly as grateful diluents, as suitable vehicles for medicines of greater efficacy, or for rendering disgusting ones more acceptable to the palate and stomach; few of them are depended on, with any intention of consequence, by themselves.

To the chapter on Simple Distilled Waters, the London college have annexed the following remarks:

The waters are to be distilled from the dried herbs, unless otherwise ordered, because they are not to be had fresh at all times of the year. Whenever they are used fresh, the weights are to be doubled.

To every gallon of these waters add five fluidounces of proof-spirit, to preserve them.

The Edinburgh and Dublin colleges order half an ounce of proof-spirit to every pound of the water; which is nearly the same proportion.

AQUA DISTILLATA. *Lond.*
Distilled Water.

Take of

Water, ten gallons.

Draw off by distillation, first, four pints; which being thrown away, draw off four gallons, which is to be kept in a glass bottle.

Dub.

Take of

Spring water, twenty pints.

Put it into a glass retort, and having thrown away the first pint which comes over, draw off one gallon by distillation with a gentle heat.

Ed.

Let water be distilled in very clean vessels, until about two-thirds have come over.

WATER is never found pure in a state of nature; and as it is absolutely necessary, particularly for many chemical operations, that it should be perfectly so, we must separate it from all heterogeneous matters by distillation. The first portion that comes over should be thrown away, not so much from the possibility of its being impregnated with volatile matters contained in the water, as from the probability that it will be contaminated with impurities it may have contracted in its passage through the worm in the refrigeratory. The distillation is not to be pushed too far, lest the water should acquire an empyreumatic flavour.

Although distilled water be necessary for many purposes, we apprehend that the London college, from a desire of extreme elegance, in their former edition, fell into a very considerable error, in ordering it to be employed for many purposes, such as infusions and decoctions, for which good spring water answers just as well, and for which, we will venture to say, that distilled water never is employed by the apothecary. The consequence was, that the apothecary having no rule to direct him, when it was absolutely necessary, and when it might be dispensed with, dispensed with it oftener than was proper. In the present edition they have taken care not to subject themselves to this criticism.

*AQUA CITRI AURANTII. Ed.**Orange-peel Water.*

Take of

Fresh orange-peel, two pounds.

Pour upon it as much water as shall be sufficient to prevent any empyreuma, after ten pounds have been drawn off by distillation. After due maceration, distil ten pounds.

*AQUA ANETHI. Lond.**Dill Water.*

Take of

Dill seeds, bruised, one pound.

Pour upon them so much water, that after the distillation enough may be left to prevent empyreuma.

Draw off one gallon.

AQUA FOENICULI DULCIS. *Dub.*
Fennel Water.

Take of

The bruised seeds of sweet fennel, one pound.

Water, as much as may be sufficient to prevent empyreuma.

Distil one gallon.

IN the same manner, and in the same quantity, prepare

AQUA	Water of
ANETHI. <i>Lond.</i>	{ Dill, from one pound of the seeds bruised.
CARUI. <i>Lond.</i>	{ Caraway, from one pound of the seeds bruised.
CITRI AURANTII. <i>Ed.</i>	{ Orange-peel, from two pounds fresh.
CITRI MEDICÆ. <i>Ed.</i>	{ Lemon-peel, from two pounds of the fresh peel.
FOENICULI. <i>Lond.</i>	{ Fennel, from one pound of the bruised seeds.
FOENICULI DULCIS. <i>Dub.</i>	{ Sweet Fennel, from one pound of the seeds bruised.
LAURI CASSIÆ. <i>Ed.</i>	{ Cassia, from one pound of the bark bruised.
LAURI CINNAMOMI. <i>Ed.</i>	{ Cinnamon, from one pound of the bark bruised.
CINNAMOMI. <i>Lond.</i>	{ Cinnamon, from one pound of the bark bruised, and macerated for twenty-four hours in a pint of water.
CINNAMOMI. <i>Dub.</i>	{ Cinnamon, from one pound of the bark bruised, and macerated for a day.
MENTHÆ PIPERITÆ. <i>Ed.</i>	{ Peppermint, from three pounds of the herb in flower.
MENTHÆ PIPERITIDIS. <i>Dub.</i>	{ ————— from one and a half.
MENTHÆ PIPERITÆ. <i>Lond.</i>	
MENTHÆ PULEGII. <i>Ed.</i>	{ Pennyroyal, from three pounds of the herb in flower.
PULEGII. <i>Lond. Dub.</i>	{ ————— one and a half.
MENTHÆ SATIVÆ. <i>Dub.</i>	{ Spearmint, one pound and a half.
————— VIRIDIS. <i>Lond.</i>	
MYRTI PIMENTÆ. <i>Ed.</i>	{ Pimento, half a pound bruised.
PIMENTO. <i>Dub.</i>	{ Pimento, from half a pound bruised and macerated for a day.
PIMENTÆ. <i>Lond.</i>	{ Pimento, from half a pound bruised, and macerated for twenty-four hours in a pint of water.

AQUA

Water of

ROSÆ CENTIFOLIÆ. Ed.	}	Rose, from six pounds of the recent petals.
ROSÆ. Dub.		Rose, from six pounds of the recent petals of the Damask rose.
ROSÆ. Lond.		Rose, from eight pounds of the petals of the hundred-leaved rose.

The virtues of all these waters are nearly alike; and the peculiarities of each will be easily understood, by consulting the account given in the materia medica of the substance from which they are prepared. Mr Nicholson mentions, that as rose-water is exceedingly apt to spoil, the apothecaries generally prepare it in small quantities at a time from the leaves, preserved by packing them closely in cans with common salt. This, we understand, is not the practice in Edinburgh; and, indeed, cannot succeed with the petals of the damask rose; for they lose their smell by drying. The London apothecaries, therefore, probably use the red rose. The spoiling of some waters is owing to some mucilage carried over in the distillation; for, if rectified by a second distillation, they keep perfectly well for any length of time.

 CHAP. XXII.

EMPYREUMATIC VOLATILE OILS.

EMPYREUMATIC OILS agree in many particulars with the volatile oils already treated of, but they also differ from them in several important circumstances. The latter exist ready formed in the aromatic substances from which they are obtained, and are only separated from the fixed principles by the action of a heat not exceeding that of boiling water. The former, on the contrary, are always formed by the action of a degree of heat considerably higher than that of boiling water, and are the product of decomposition, and a new arrangement of the elementary principles of substances, containing at least oxygen, hydrogen and carbon. Their production is therefore always attended with the formation of other