VOLATILE OILS.

VOLATILE oils are obtained chiefly from the flowers, leaves, fruits, barks, and roots of plants, by distilling them with water, in which they have been allowed to macerate for some time. In order to obtain these oils profitably and of good quality, a great variety of conditions must be attended to, differing in regard to each, and such as it would be out of place to enumerate here in detail. Certain general principles, however, may be mentioned.

Flowers, leaves, and fruits generally yield the finest oils, and in greatest quantity, when they are used fresh. Many, however, answer equally well, if they have been preserved by beating them into a pulp with about twice their weight of muriate of soda, and keeping the mixture in well-closed vessels.

Substances yielding volatile oils must be distilled with water, the proper proportion of which varies for each article, and for the several qualities of each. In all instances the quantity must be such as to prevent any of the material from being empyreumatized before the whole oil is carried over. In operations where the material is of pulpy consistence, other contrivances must be resorted to for the same purpose. These chiefly consist of particular modes

of applying heat so as to maintain a regulated temperature not much above 212°. On the small scale heat may be thus conveniently applied by means of a bath of a strong solution of muriate of lime, or by means of an oil-bath, kept at a stationary temperature with the aid of a thermometer. On the large scale heat is often applied by means of steam under regulated pressure. In other operations it is found sufficient to hang the material within the still in a cage or bag of fine net-work; and sometimes the material is not mingled with the water at all, but is subjected to a current of steam passing through it.

The best mode of collecting the oil is by means of the refrigeratory described in the Preface; from which the water and oil drop together into a tall narrow vessel provided with a lateral tube or lip near the top, and another tube rising from the bottom to about a quarter of an inch below the level of the former. It is evident that with a receiver of this construction the water will escape by the lower tube; while the volatile oil, as it accumulates, will be discharged by the upper one, except in the very few instances where the oil is heavier than water.

By attending to the general principles now explained, Volatile oils may be readily obtained of excellent quality from the flowers of

ANTHEMIS NOBILIS,
LAVANDULA VERA, and

Ruta graveolens;
From the fruit of
Anethum graveolens, bruised,
Carum carui, bruised,
Eugenia pimento, bruised,
Fœniculum officinale, bruised,
Juniperus communis, bruised,
Piper cubeba, ground, and
Pimpinella anisum, ground;
From the undeveloped dried flowers of
Caryophyllus aromaticus;
From the tops of
Juniperus sabina, and
Rosmarinus officinalis;
From the entire herb of
Mentha piperita,
Mentha pulegium,
Mentha viridis, and
Origanum majorana;
And also from the bruised root of
Sassafras officinale.

Oleum terebinthinæ purificatum.
Take of oil of Turpentine, one pint;
Water, four pints;
Distil as long as oil comes over with the water.

Oleum copaibæ.
Take of Copaiva, one ounce;
Water, one pint and a-half;

Distil, preserving the water; when most of the water has passed over, heat it, return it into the still, and resume the distillation; repeat this process so long as a sensible quantity of oil passes over with the water.