

small particle of red aniline, soluble in alcohol, be dropped into a vial of the synthetic oil, it will immediately show a disposition to dissolve, which is not the case with true wintergreen. Practically, this is found to be the case. In three to five minutes' time, by agitating vials of both oils with aniline in them, it will be noticed that the artificial product readily dissolves the aniline, whereas the other will hardly have any perceptible effect on it. After the lapse of fifteen minutes to half an hour both will be discolored, but the artificial will have a purplish tint, while the natural oil will be more of a cherry color, and, in proportion as the two are mixed, so will be the time and extent of coloration.

This is a delicate test, fit only for use by experts, for which reason we have not hitherto published it, as by it a careless user would probably reject all the oil he purchased, whether pure or otherwise. Before adopting it for use it will be well to make several experiments, in order to get a correct idea of the length of time required for the action of pure oil wintergreen on the aniline, in comparison with the artificial or known mixtures of the two.—*American Soap Journal*.

Camphor.

A great variety of plants contain camphor, but the article of commerce known as camphor is chiefly obtained from the *Laurus camphora*, a tree which grows in Japan and the islands of the Eastern seas. The chief habitat of the tree, however, is the island of Formosa, where it reaches to its greatest size, and where most of the camphor of the Western commerce is produced.

In addition to these supplies, a large quantity is shipped from Japan, but there is considerable difference between the produce of the two localities, the latter being of a lighter color, and of a pinkish hue, and also a coarser grain than that obtained from Formosa, and it also commands a higher price in the market—almost twice the amount as that from the island. Although the camphor tree, or shrub, is found in China, especially abounding in the eastern and central provinces, Chekiang and Kiangsi, very little is manufactured in that country, although very large trees are met with, some of them being nine feet in girth, and the wood is an important item in the timber trade of Hankow. But in the island of Formosa the forest covers the line of mountains from north to south in those districts where the virgin vegetation has not given place to cultivation. The island of Formosa lies partly within the tropics. It is 210 miles in length, and 70 miles in width, and separated from China by the Formosa Strait, and the position is such as to render it a possession of importance for the Eastern trade. It has a fertile soil, and is extremely rich in minerals.

The island is inhabited partly by Chin-

ese, and partly by the aboriginal savage tribes. These are natives, sprung from the Malayan stock, and are confined to the mountain country of the eastern and southern districts, while the Chinese are limited to the western and a small portion of the north. Year by year the latter slowly advance in their search for camphor, but at great risk to themselves, as there is no friendly feeling between them and the natives. The trade has of late years been gradually decreasing owing to the great risk entailed in collecting, and from the fact that the extraction of camphor causes the destruction of the tree, and this has never been made good by replanting, so the forest becomes less and less, the Chinese advancing, while the aborigines retreat. The mutual jealousy and encroachments between the two parties are considerable.

The sight of a virgin forest, such as these in Formosa, when once seen will not easily be forgotten. The trees grow to a height of about fifty feet, the leaves are of a bright shining green color, and when bruised give out the odor of camphor. The wood is much prized and sought after for carpentry and cabinet work, as it is white and very fragrant, which latter quality is considered to act as a deterrent to all kinds of insects. The tree has of late years been introduced into other countries, and may be found in the Parisian nurseries, and is occasionally met with in Great Britain.

The method of collecting and preparing this substance differs considerably in the various countries in which it is found, and it is exceedingly pleasant and interesting to accompany the camphor merchants, although the expedition is attended by numerous risks in Formosa, as the work must be done in an enemy's country.

A careful selection of the trees is first made; those chosen are such as possess an abundance of sap, for those which are dry are useless except for the wood, which in every case is secured, as it is in great demand. The camphor is prepared from such portions as the branches, roots, and refuse; these are taken freshly cut, and reduced to small pieces, so as to be suitable for distillation. This process is done by means of stills fixed under temporary erections on the ground; they are exceedingly rough and crude. A number of fires are then made, and over them is placed a long wooden trough or hollowed tree, coated with clay, and half filled with water. Boards pierced with holes are then fitted on to the trough, and above these are placed rough jars containing the camphor wood. The mouths of these jars are then covered with inverted pots, and the joints made air-tight by various methods, mostly by hemp packing.

The fires being lit, in course of time the generated steam passes from the water through the pierced boards, and so saturates the wood contained within the jars, causing the sublimated camphor to settle in crystals on the inside of the pots.

It is then scraped off, and undergoes other processes of distillation for the purpose of purifying the substance. Within a copper vessel a layer of earth containing lime is placed, and on this layer is deposited the crude camphor. This again is covered by a layer of earth, and so alternately, until the vessel is full, the last layer being, of course, the earth. The whole is then covered with green mint.

A vessel formed of straw, covered on the outside with wet clay, is then put over the still and fixed. This combined apparatus is then placed over a fire and allowed to heat, and, after a considerable time, left to cool.

The vessels are then opened and the camphor is found to have sublimed, attaching itself to the upper vessels. From these it is scraped every few days, and is then very pure and clean. Camphor, when pure, is a white brittle substance, forming octagonal crystals or square plates.

For purposes of transport, camphor is placed in large vats or tubs with holes at the bottom; through these holes passes an oily liquid, known as camphor oil, to the extent of three to four per cent. This possesses a very strong odor, and holds in solution a quantity of common camphor, which it deposits in crystals when exposed to a low temperature. This oil is much used by the Chinese as an embrocation for all rheumatic complaints, and bids fair to become a very valuable import. In Japan this oil is used for lighting purposes by the very poor, who burn it in open lamps, notwithstanding its odor and dense smoke.

Nearly all the camphor produced in Formosa is shipped from Tamsui, at the northern extremity of the island. This is, indeed, an interesting place, and the old Spanish fort on the eastern side of the harbor, built more than a thousand years ago, as well as the Consular prison, adds to its charms. Were it not for the trade in camphor the exports would be small indeed. From here, it is conveyed in native vessels to the various ports of China. Owing to its being badly packed, and the large quantity of water absorbed during its sublimation, the loss by evaporation during the sea journey is considerable.

This has been somewhat remedied of late years by means of an hydraulic press. But it is becoming more and more evident that the supply from this locality is gradually decreasing. The seaboard has no longer its camphor trees, and the collectors are compelled to go further inland for their supply. On the mountains in the interior there are still large tracts, but some care is necessary, so that the supply should not cease altogether.

The Japanese are, however, alive to the importance of this trade, and, as the tree is fairly distributed throughout that country, it will doubtless receive the attention of that enterprising nation, especially in the province of Tosa, in Sikok, for it is in this locality that the preparation of cam-