Notes on Essential Oils.*

Anise oil is now almost wholly produced in Russia.

Camphor oil from Japan is coming into favor as a solvent for resins, paraffins, stearin, etc. In Japan it is coming into use as a solvent in lacquers. A favorite lacquer consists of camphor oil, 10 parts; oil of turpentine, 3½ parts; and copal resin, 8 parts. Paper treated with a solution of common resin in camphor oil becomes very transparent. A lacquer for metals is made by mixing camphor oil, 22 parts, with melted asphalt, 5 parts. Paper may be rendered water proof by treating with a mixture of camphor oil and linseed oil.

Cananga oil, designated as Indian, imported from Java, is supposed to be derived from the same plant as that which furnishes the ylang-ylang oil of the Philippines, but it is sold at a much lower price, and is very inferior in odor.

Cedar wood oil, used largely in Germany as a basis for soap perfume, is obtained chiefly from the waste of the lead pencil industry.

Eucalyptus oil, from E. globulus, is now produced in California in large quantities as a by-product in the manufacture of a preparation to prevent incrustations in steam boilers. Algeria also competes with Australia in the production of this oil, and is able to supply all present demands. The manufacture of the oil in Australia is, however, increasing, and a plant is about to be established also in Tasmania for distilling it. The statement made in a former report that the oil of E. amygdalina contains no eucalyptol is reaffirmed. The product sold as eucalyptol derived from the last named species differs *in toto* from true eucalyptol. The former consists of a mixture of terpin (eucalypten, $C_{10}H_{16}$) with a little cymol, and is distinguished at once by its low specific gravity, 0·886 at 15 deg. C., the genuine article having a sp. gr. of 0·930.

Turkish geranium oil (Palmarosa oil), more properly called Andropogon oil, is said to be submitted to a special treatment to render it suitable for use in adulterating oil of rose. It is bleached in the sun and rectified several times over rose leaves.

Hop oil, distilled from Bavarian hops, has now displaced that prepared from lupulin, which it excels in richness and delicacy of odor, due to the absence of butyric and valerianic acids. It is a mistaken notion that this oil has narcotic properties.

Marjoram oil from Spain, recently introduced into commerce, differs essentially from the oil distilled from German marjoram. It is recognized by its freedom from color.

Pepper oil, used extensively in fortifying spices, is obtained as a by-product in the manufacture of piperonal (heliotropin).

Rose oil and rose water have been recently produced in limited quantities experimentally in Germany, near Leipsic. It is said that there are now under cultivation for this purpose 15 acres of land, and the results have been quite satisfactory. The German oil is superior to any imported. It congeals at 20° (68° F.), showing the presence of a larger proportion of the fragrant stearoptene than is contained in the best Turkish oil.

Betel leaves yield an essential oil (0·5 per cent) of a brown color, an agreeable, tea-like odor, and a burning taste. Its specific gravity is 1·020 at 15° C. It boils at 250° to 260° C., and consists of a phenol agreeing in properties and reactions with eugenol and an indifferent hydrocarbon. The leaves are used in India in catarrhal and pulmonary affections, and it is probable that they owe whatever therapeutic virtue they have to the essential oil.

Musk seed yields a volatile oil which is likely to be of value in perfumery as a substitute for civet or musk. Its specific gravity at 25° C. is 0·900. It solidifies at a temperature below 10° C., and contains a free fatty acid, probably palmitic, which separates partially even at common temperatures.

Thymol is contained in abundance in the volatile oil of Monarda punctata, the American horsemint, which may hereafter become an important commercial source of this substance. The use of thymol as an antiseptic in dentifrices, etc., and as a general disinfectant, is rapidly increasing.

* From the October report of Messrs. Schimmel & Co., of Leipsic. —*Pharm. Era.*

SCIENTIFIC AMUSEMENTS.

The experiments herewith illustrated are selected by *La Nature* from a new edition of Mr. Gaston Tissandier's *Recreations Scientifiques*.

Fig. 1 shows the method of making a sling with a cane and a potato. The end of the cane is inserted in a potato in such a way that the latter shall have a certain degree of adhesion and be pretty firmly fixed. This done, the cane is swung around after the manner of a sling, and, being abruptly arrested at the moment when the end points toward the sky, the potato is thrown to a great height in the air.

Fig. 3.—DESSERT EXPERIMENT.

Fig. 2 shows the well known "sucker" of school boys. This object, as well known, consists of a leather disk through the center of which passes a strong cord, knotted on the under side of the disk to prevent its escape. After the disk has been soaked in water, if it be pressed against the sidewalk with the foot, and the cord be pulled, it acts on the principle of a cupping glass, and it is very difficult to separate it from the stone to which it adheres.

Fig. 3 shows a method of performing a neat dessert experiment. When a grape or raisin is allowed to fall to the bottom of a glass of champagne, bubbles of gas are observed to attach themselves to it. This causes it to rise to the surface, where the bubbles burst. Then it sinks, and afterward begins its ascent again. The bubbles of carbonic acid gas perform the role of minute balloons ascending in the liquid.

Patents as Investments.

It has been said that the introduction of useful inventions seems to hold by far the most excellent place among human actions. Unfortunately this, like many other truths, is not sufficient of itself to incite the inventive faculty. In these money-getting times mere sentiment succumbs to pecuniary gain, and when the value of an invention is called into question, it is not its moral or beneficial effect upon the community that is considered, but rather the more practical one of its influence upon the pocket. Do patents pay? is a question often put, and frequently answered in the negative, but erroneously so. For the amount of money invested, there are few properties that have paid more handsomely. Take the leading investments of the day, how many of them are gigantic failures? Of course all patents do not pay, neither do all investments in any description of property; but in these days of wild speculation, railroad bubbles, and bank failures, it may be very opportunely asked whether thirty-five dollars, or a little over two dollars a year, paid to the government for a seventeen years' exclusive right in and to some useful invention, is not a promising investment? It at least is not a very extravagant one.

We all know of patents that have paid their millions, but we do not all know of the many thousands upon thousands of patents which have realized for their owners amounts varying from five thousand to fifty thousand dollars and upward. Contrast these realizations and the paltry outlay required with other investments, and where is the property which yields as large a return? That many patents do not pay is not always the fault of the invention, but not unfrequently is due to the want of proper commercial management, or to the clumsy form in which the invention, perhaps a very meritorious one, has been ushered to the public. But even these patents ultimately sometimes prove valuable, on account of the principle involved or some one particular construction or combination they cover, so that holders of subsequent patents are compelled to pay tribute, and it is never safe to consider a patent worthless because it is dormant. Its day, after the lapse of years even, may come unexpectedly.

Again, inventors frequently are at fault in not following up their inventions by fortifying the original patent with subsequent ones covering improvements in matters of detail. Nor should repeated failure discourage an inventor; for if only one patent out of every ten pays, it will many times more than compensate for the cost of the ten. Not merely scientific men and mechanics, but men of leisure, will do well, then, to consider whether a patent, if only as a speculation, is not a cheap investment, even if the weightier consideration of advancing the cause of science or adding to human comfort, by ever so small a step, be altogether discarded.

Flour Dust Dangerous.

The *Milling World* reminds millers of the oft-proved fact that flour dust is a dangerously explosive material. Beware, says the editor, of lights thrust or carried into bins or rooms filled with dust-laden air. A week ago, he adds, I was startled as well as amused, on entering a friend's mill, to see the latest "cub" going around with an uncovered light, doing some investigation on "his own hook." As he thrust the light into a very dusty place, which his boyish curiosity suggested to him to explore, he was whistling in that peculiar foghorn tone peculiar to and possible to nobody but a half-grown boy, the popular old tune "I want to be an angel!" As his whistle rose keen and triumphant above the whirr and rattle of the mill machines, I almost expected to witness the answering of his whistled prayer by an explosion of dust that would at once convert him into the angel he professed to wish to be. Having put the foreman on his track, I felt safer to stay inside that building until my business was transacted. In how many cases is the wild, fresh, careless, untutored "cub" the real cause of "mysterious" fires and explosions? He is often as dangerous as a dynamite bomb or a fire brand.

New Remedy for Seasickness.

Prof. Watson Smith announces that in the new artificial alkaloid, antipyrine, discovered in 1883, by Knorr, of Erlangen, a potent remedy for seasickness has been found. The source of this antipyrine is that also of the aniline colors—viz., aniline—and thus, strange to say, this medicament is manufactured in the works of a large German firm producing alkalies, acids, and coal tar colors. Antipyrine may then be considered as a coal tar product. According to the *Compt. Rend.*, 1887, 105, 947, E. Dupuy administered antipyrine during the last three days before embarking and the first three days of an ocean voyage, in doses of 3 grammes per day. He states that none of the persons thus treated suffered from seasickness during the voyage across the Atlantic Ocean—a sufficiently severe test, certainly. Again, another and independent authority, M. Ossian-Bonnet (*Compt. Rend.*, 1887, 105, 1,028), states that antipyrine acts excellently as a remedy against seasickness. In most cases a dose of 1½ grammes is sufficient, the effect being manifested in about ten minutes. In other cases the dose must be repeated. M. Ossian-Bonnet never required to use more than 3 grammes, in two doses, in order to completely remove the evil within an hour. In some cases, which were very rare, when the sick person, in consequence of continued vomiting, could not take the remedy, a subcutaneous injection of one gramme of antipyrine proved sufficient to remove the seasickness.

Fig. 1.—EXPERIMENT ON CENTRIFUGAL FORCE.

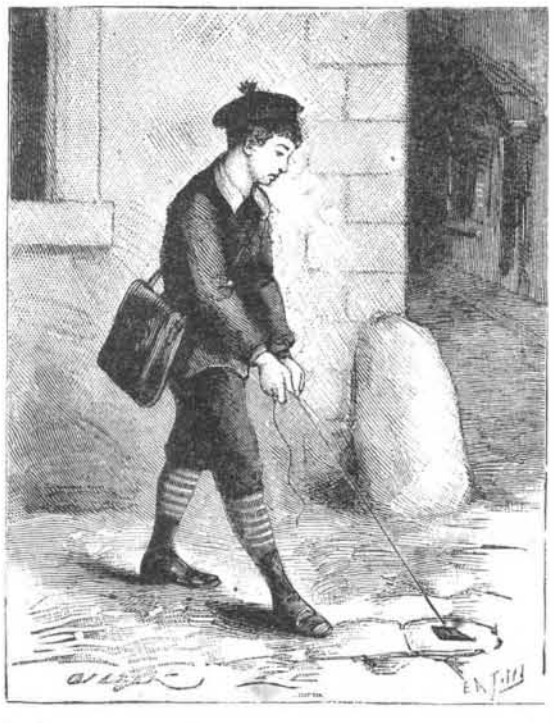

Fig. 2.—EXPERIMENT ON ATMOSPHERIC PRESSURE.