the drug is carried on in these localities. Japanese camphor is distinguished from Formosan by being coarser grained, clearer, of pinker hue, and by subliming at a lower temperature.

It is also known as "Dutch" or "tub" camphor, the latter name arising from its being imported into Europe in tubs covered with matting, each placed within a second tub, secured on the outside by hoops of twisted cane. No metal lining is used, and the camphor is thus drier than the Formosan. Each tub holds about 1 to 1¼ cwt. The selling price is nearly twice as high as the Formosan, and the imports to Europe are about as 1 to 6.

In India the refining of common camphor is a process of itself. The oil is absorbed by means of quicklime; two earthen pots are luted together, having a small aperture for the escape of the air on the first application of heat. Camphor is mixed with water in proper proportions, and put into a copper still; more is added, and a copper lid is then put on, and to make it perfectly tight an iron bar is passed through it and the vessel, by holes made for the purpose. The still is then lifted by handles and set on an earthen *chula*, below which fires are burning. The lid and edges of the still are smeared with wet clay, which is piled up into the shape of a cone. In about fifteen minutes steam comes through the hole where the bar goes, whereupon a cloth attached to a bamboo is dipped into a receptacle filled with water and mopped over the clay cone on the still, so that the water keeps the upper portion cool. This is maintained for three hours, when the sides of the still are beaten by a stick. If this produces the sound of an empty vessel, it is known that the process of sublimation is complete; the still is then removed from the *chula* and the lid is opened. The camphor is found in a thick crust lining the upper part of the sides of the still; it is divided into four pieces by a knife, then packed, and is ready for market. Such is the Indian process.

The refining of camphor was for long confined to Venice, but it is now carried on in England, Holland, Hamburg, and Paris, the product being much finer and purer than that obtained by crude processes such as that described.

One other kind of camphor still remains to be mentioned—that is, the Ngai camphor. This is manufactured at Canton and in the Island of Hainan, the plant from which it is obtained being the *Blumea balsamifera*, called in Chinese, Ngai, abundant in tropical Eastern Asia. As this product is about ten times the price of Formosan camphor, it never finds its way into Europe as an article of trade. It is consumed in China, partly in medicine and partly in perfuming the finer kinds of Chinese ink. The export of this camphor by sea from Canton is valued at about £3,000 per year. It is also sent from Kiung-chow, in the Island of Hainan. —*The Produce World.*

A Fluorescent Constituent of Calumba.

By Alexander Gunn, F.C.S.

There are probably few pharmacists who have not experienced the difficulty of obtaining fluid preparations of calumba in a brilliant condition. Whether tincture, fluid extract, or infusion, it is found to be a matter of impossibility to remove the turbid appearance by any mode of filtration.

In dealing with concentrated liquid preparations of calumba the difficulty is accentuated, the appearance of such preparations being frequently akin to that of pea-soup. Careful observers may, however, have noticed that such solutions, when examined by transmitted light, are perfectly translucent, and that there is evidently no trace of solid matter in suspension.

The firm with which I am connected frequently receives complaints from pharmacists of the turbidity of its calumba preparations, and occasionally the preparation itself is returned as "unfit for use." When it is pointed out that the turbidity is only apparent, and that the opalescence is due to phenomena of optical interference, the explanation is accepted with more or less hesitation, and it appears desirable that some positive evidence should be obtained to prove the correctness of the theory. During the last fortnight I have been engaged in investigating the matter, with results sufficiently encouraging to induce further research.

To demonstrate in a striking and simple manner that calumba contains a fluorescent body, half fill a test-tube with B.P. tincture of calumba. Examine this by reflected light, and it will be seen that there is a fluorescence of a pronounced green tint. Add now a few drops of liquor potassæ, and again observe by reflected light; the fluorescence now is of a velvety deep blue or violet color.

Although I have not at present been able to obtain the fluorescent constituents in a sufficiently pure condition to ascertain its nature, I have found the following plan successful in partially separating it from the coloring matter of the tincture:

Take 50 c.c. of the tincture and acidify with 5 c.c. dilute hydrochloric acid. Shake with a sufficient quantity of ether to form a distinct layer on separating. The yellow ethereal solution is shaken with purified animal charcoal during a quarter of an hour and then filtered. The filtrate is now gently shaken with a 1 per cent. solution of ammonia in water. There is a flocky precipitate thrown out of the ammoniacal solution, but on filtration the fluorescence will show up beautifully.

In order to isolate the fluorescent body and to ascertain its composition, I take a strong proof spirit percolate of calumba (say, of such a strength that 1 = 1), mix with about three times its volume of distilled water, and stir in some magnes. calc. and kieselguhr, which help, although imperfectly, to remove something that interferes with the proper extraction of the fluorescent body. Allow to stand for a day or so, shaking up occasionally, and then filter; add about an equal volume of dilute sulphuric acid, shake with ether, and separate the ethereal liquor, which is of a slightly yellow color. The acid liquid will then be free from fluorescence. The ethereal solution when shaken with ammoniacal water yields the fluorescence to the latter.

I cannot imagine that this fluorescence is due to any already known constituent of calumba. Such a property as fluorescence in an isolated body is, one would suppose, too obvious to be overlooked.—*Pharmaceutical Journal.*

Disinfection of Vaults and Cesspools.

Dr. Vincent recently reported to the Academy of Sciences at Paris the result of experiments for the purpose of determining the best disinfectant for rendering fæcal matters innocuous. He required of each disinfectant that it should kill all pathogenic microbes, including the bacillus coli communis and the bacteria of putrefaction. His experiments showed that the best of all disinfecting agents for the destruction of fæcal matters in vaults and cesspools is sulphate of copper employed in connection with one per cent. of sulphuric acid. The quantity of sulphate of copper required was one pound for every three cubic feet of fæcal matter mixed with urine. Half this quantity was found sufficient to destroy the cholera bacillus. It was found necessary that the disinfectant should remain in contact with the infectious material for at least twelve hours.—*Modern Medicine.*

The New Zealand Pharmacy Bill.

The New Zealand Pharmacy Bill is dead. It has suffered shipwreck upon the unwillingness of the bulk of the registered chemists of the colony to allow men, now unqualified, but carrying on business as herbalists, etc., mostly in out-of-the-way places, to be incorporated into their ranks. That was the price the pharmacists were asked to pay for an Act that would have conferred substantial benefits upon them, and they refused. The signal was a letter from the New Zealand Minister of Railways (who had charge of the bill) to the Pharmacy Board, stating that, owing to the very conflicting opinions among members of Parliament, and the number of letters and telegrams received by the Government, complaining of various clauses of the bill, as well as the feeling that the proposed amendments would not be favorably received by the chemists themselves, the Government had come to the conclusion that there was no alternative but to drop the measure altogether.—*Chemist and Druggist.*