NOTE ON ADULTERATED SANDAL-WOOD-OIL.

BY T. H. PEARMAIN AND C. G. MOOR, M.A.

(Read at the Meeting, June 5th, 1895.)

WE have recently met with some gelatine capsules labelled and sold as "pure sandal-wood-oil capsules," the contents of which, on examination, proved to be castor-oil mixed with a small quantity of an unsaponifiable oil which we have not been able to identify. The oil had the characteristic taste and smell of castor-oil. It gave the following figures on analysis :

Specific gravity at $15.5^{\circ} = .9633$.

Iodine absorption = 88.0 per cent.

Unsaponifiable matter = 5.0 per cent.

Valenta test (using 84 per cent. acid) turbid at 100° C.

Miscible with glacial acetic acid.

Miscible with 3 volumes of rectified spirit.

Saponification value = 17.0 per cent. KHO

(Corrected for unsaponifiable matter = 17.9 per cent. KHO).

Rotation for 100 mm. at $15.5^{\circ} = +8.0^{\circ}$.

Bromide of tin test = bright green.

Fatty acids:—

Solidifying-point, 0° C.

Melting-point, 13° C.

Iodine absorption, 90.1 per cent.

The somewhat high figures obtained in the case of the iodine absorption and rotation we attribute to the presence of the unsaponifiable oil. The highest dextro-rotatory castor-oil we have examined had an activity of 4.7° .

The unsaponifiable matter gave the green colour with the stannic bromide test to a much more marked extent than the original oil, thus proving this body to be the cause of the green coloration.

The stannic bromide test is performed as follows: To three drops of the oil under examination are added three or four drops of freshly-made stannic bromide containing a little free bromine,* the mixture well stirred, and the colour produced after two or three minutes noted. Genuine sandal-wood-oil gives a blood-red colour, the mixture becoming almost dry and solid after one hour. Cedar-oil, the most common adulterant of sandal-wood-oil, gives a purplish colour. A mixture of the two does not solidify on standing.

On account of the difficulty of obtaining a sufficient quantity of material, we have been obliged to omit many estimations, the results of which would have been of interest.

We found it necessary to dilute the acetic acid before applying the Valenta test, sandal-wood-oil being miscible with glacial acetic acid. 84 per cent. acid was found to be the most convenient strength.

The following are some results obtained on some genuine sandal-wood and cedar oils:

Sample.	Oil.	Source.	Sp. Gr. at 15.5° C.	Iodine Absorption.	Rotation 100 mm. at 15.5° .	Valenta Test (84% Acid).	Bromide of Tin Test.
A	Sandal-wood	Indian	0.9815	226.0	L 13.84°	60°	Blood-red
B	"	"	0.9792	225.0	L 15.21°	50°	"
C	"	"	0.9798	246.5	L 15.55°	52°	"
D	"	"	0.9792	244.1	L 15.70°	47°	"
E	"	"	0.9840	215.3	L 19.53°	—	"
F	"	Australian	0.9496	239.5	R 6.19°	50°	"
G	"	—	0.9495	228.6	R 4.82°	52°	"
H	Cedar	—	0.9819	200.4	L 39.0°	above 100°	Purple
I	"	—	0.9840	241.5	L 26.0°	"	"
J	"	—	—	—	L 30.0°	"	"

* Made by allowing dry bromine to fall drop by drop on granulated tin contained in a flask kept cool by immersion in cold water, until the product has a red colour indicating excess of bromine.