SOME 200 YEAR-OLD SPECIMENS OF DRUGS

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THROUGH the kindness of Mr. E. Saville Peck and the Editor of THE PHARMACEUTICAL JOURNAL I have been given the opportunity of examining some old specimens of balsam of Peru and oils of anise, cloves and turpentine. The samples were taken by kind permission of the President of Queens' College, Cambridge, from bottles in the materia medica cabinet in the library of this College. The drugs and chemicals in the cabinet were bought by Signor John Francis Vigani, first professor of chemistry in the University, in 1704, and the invoice of these drugs is in the possession of the College, together with interesting letters concerning them. [Signor Vigani and his 200-year-old cabinet of medical materials formed the subject of a lecture given by Mr. E. Saville Peck to the Cambridge Antiquarian Society on February 18.]

Considering the age of the samples they all appeared to be in surprisingly good condition. As might be expected, the oil of turpentine had darkened slightly and was somewhat oxidised. The oil of cloves had also darkened and the oil of anise had a somewhat unusual odour, but in other respects the specimens might have been recently prepared. The odour of the balsam of Peru was, in fact, finer than most specimens to be found on the market to-day, and the clove oil had a particularly soft and sweet aroma. The analyses are set out below.

BALSAM OF PERU

	Old oil		B.P. limits
Sp. Gr. 15·5°/15·5°	1·142	.....	1·140—1·170
Cinnamein	69·8 per cent.	.....	not less than 53 per cent.
Saponification value of cinnamein	241	.....	not less than 235

Qualitative Tests

Odour of light petroleum extract—no turpentine or benzaldehyde.

Acetic Anhydride test—no reddish or bluish-violet colour was produced.

Nitric acid test—a yellow colour, but no green, blue or purplish-red colour developed.

Copper acetate test—a very faint green colour was observed in the light petroleum layer.

Observations.—It will be seen on reference to the paper by Miss E. M. Smelt (*Quart. J. Pharm. and Pharmacol.* 1932, **5**, 378), that this balsam resembles in its character the specimen A which was taken from the Hanbury Collection in the Museum of the Pharmaceutical Society of Great Britain. Specimen A was labelled "obtained by incision from the stem," and is stated to be about eighty years old. A balsam with such a high percentage of "cinnamein" might now be looked on with suspicion as containing artificial balsam. The fact that these two old specimens contain such high amounts of cinnamein does suggest, however, that the drug was formerly richer in this constituent than in these days.

ANISE OIL

	Old oil		Usual limits
Sp. Gr. 15·5° /15·5°	0·9856	.....	0·980 — 0·994
Ref. Ind. 20°	1·5547	.....	1·554 — 1·560
Freezing Point	15·0°	.....	not below 15°
Melting Point	17·3°	.....	not below 17°

Soluble to a clear solution in 90 per cent. alcohol, 1 in 3. There is nothing unusual about this oil.

CLOVE OIL

	Old oil		B.P. limits
Sp. Gr. 15·5° /15·5°	1·0456	.....	1·047 — 1·660
Ref. Ind. 20°	1·5232	.....	1·526 — 1·537
Eugenol	high*	.....	85 — 90 per cent.

*Insufficient oil was available for quantitative determination. 2 millilitres of oil appeared to be almost completely absorbed.

This oil would evidently not comply with the present requirements, and from its low specific gravity is likely to be low in eugenol content. Nevertheless, as stated above, the oil is remarkably sweet in aroma.

THE MATERIA MEDICA CABINET OF SIGNOR VIGANI, 1704

In looking through the history of clove oil I found the following statement in Lewis's 'Materia Medica,' 1761 edition:—

> The oil of cloves commonly met with in the shops and received from the Dutch is, indeed, highly acrimonious, but this oil is plainly not the genuine distilled oil of the clove, for, notwithstanding its being more pungent than that which cloves afford by the common process of distillation, it contains a large admixture, oftentimes half its weight or more, of an insipid expressed oil. . . . It is probably from an admixture of the resinous part of the clove that this sophisticated oil receives both its acrimony and high colour. Fresh cloves are said to yield a high-coloured thick fragrant oil upon expression; possibly the common oil of cloves brought from the spice islands is no other than this oil diluted with insipid ones. The college of London seems to require both the common and the genuine oil to be kept in the shops, making essential oil of cloves both an article of the materia medica and an officinal preparation.

The oil is apparently not the oil of cloves "commonly met with in the shops," but the genuine distilled oil.

TURPENTINE OIL

	Old oil		B.P. limits
Sp. Gr. 15·5°/15·5°	0·8723	.....	0·860—0·870
Ref. Ind. 20°	1·4741	.....	1·476—1·477
Iodine value	383	.....	not less than 340
Residue on evaporation	3·25 w/v	.....	not more than 0·5 w/v

As is to be expected, this oil appears to have become rather oxidised or polymerised, but if this is so it is strange that the iodine value is so high. The high residue on evaporation suggests polymerisation, but the oil may not have been originally a rectified oil, in which case the residue on evaporation would be higher than the B.P. limit.

I wish to thank Mr. Wilfred Smith for determining the analytical figures.