607 MACKEY: SOME ESTERS OF ANTIMONY TRIOXIDE.

added, and the antimony was precipitated from this solution by means of hydrogen sulphide; the antimony sulphide thus formed was converted into antimouy tetroxide by treatment with fuming nitric acid and ignited:

1.0057 gave 0.4024 Sb_2O_4 . Sb = 31.57.

 $C_{15}H_{33}O_3Sb$ requires Sb = 31.48 per ceut. This method of analysis gave the following results:

Ester. Methyl	Percentage of Sb found, 56.68	Percentage of Sb calculated from the formula R ₃ SbO ₃ . 56:41
Propyl isoButyl Amyl isoAmyl	35+37 31+44	47:41 40:40 35:40 31:48 31:48

Expressing these as salts of antimonous acid, we arrive at the general formula R_3SbO_3 for them.

Properties of the Esters of the Aliphatic Alcohols with Antimony Trioxide.

Methyl antimonite is a colourless liquid, b. p. 65°, sp. gr. 1.025.

Ethyl antimonite is a colourless liquid, b. p. 115-120°.

Propyl antimonite is a yellew liquid, sp. gr. 1.042, b. p. 143°/30 mm.; at atmospheric pressure it decomposes into propyl alcohol and antimony trioxide at 200°.

isoButyl antimonite is a yellow, mobile liquid, sp. gr. 1.058, b. p. $144^{\circ}/30$ mm.; it decomposes into *iso*butyl alcohol and antimony trioxide at 250° under atmospheric pressure.

A mul antimonite is a yellow liquid, sp. gr. 1.079, b. p. $170^{\circ}/30$ mm.

iso.lmyl antimonite is a yellow, mobile liquid, sp. gr. 1.081. b. p. $163^{\circ}/30$ mm.; at 250° , under atmospheric pressure, it decomposes into antimony trioxide and *iso*amyl alcohol.

All these esters are readily soluble in absolute alcohol, ether, chloroform, or benzene, but decompose immediately on addition of water into antimony trioxide and the alcohol from which they were prepared.

The fifth method was not employed for the aliphatic alcohols.

Esters obtained with Phenol and its Homologues.

For the esterification of these substances with antimony trioxide, two method were used, namely, heating the mixture of phenol and antimony trioxide in a flask to which a Soxhlet apparatus