Action of sulphate of ammonia on glass

M. Marchand

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by the addition of water. It has a penetrating odour of fruit and of valerian; it is colourless; its specific gravity is 0·894; its boiling point is 272° Fahr.; it is scarcely soluble in water, but dissolves very readily in alcohol, æther, and oils.

The results of the analysis with oxide of copper were

Hydrogen	10·736	10·851
Carbon	64·723	64·963
Oxygen	24·541	24·186

100·

100·

Which indicate the annexed theoretical composition,

28 eqs. hydrogen	174·713	10·623
14 carbon	1070·090	65·056
4 oxygen	400·000	24·321

1644·803

100.

According to these results, this æther is formed of

1 eq. valerianic acid	10 C + 18 H + 3 O
1 æther	4 C + 10 H + 1 O
	14 C + 28 H + 4 O

The other properties of this æther are similar to those already known.—*Journal de Pharmacie*, vol. xxiv. p. 365.

ACTION OF SULPHATE OF AMMONIA ON GLASS. BY M. MARCHAND.

A mixture of hydrochlorate and nitrate of ammonia attacks glass very strongly, especially when it contains lead; and the same is the case with sulphate of ammonia. This salt, as is well known, if neutral, is converted by the action of heat into an acid salt, giving out ammonia; it may therefore be considered, under these circumstances, as an acid salt. If it be heated in a glass vessel, it begins to fuse at about 284° Fahr.; up to 536° it suffers no alteration, but at this temperature it gives out ammonia, and sulphuric acid and sulphite of ammonia sublime, and then it may be observed that the glass is strongly attacked. All the interior surface becomes dull, because combination takes place between the sulphuric acid and the potash of the glass, and temporarily, probably, between the ammonia and the silicic acid. Most commonly the vessel, which is frequently acted upon to the middle of the glass, breaks, and from the fissures there proceeds a sort of saline fixed white mass, difficultly soluble, and which is easily found by the blowpipe to be sulphate of potash. M. Marchand states, that he has also frequently observed that watch glasses containing lead, which he employs to dry substances *in vacuo* over sulphuric acid, are covered, after a certain time (about two to four weeks) with numerous cracks, and from which he has easily detached small fragments. It was impossible, however, to determine that loss of weight occurred in this case: this phenomenon could not therefore be derived from a disengagement of inclosed air,

as Bischoff, who has made a similar observation, is inclined to suppose; the same appearances have not been observed on the receivers of the air-pump, nor in any other kind of glass.

Journal de Pharmacie, vol. xxiv. p. 367.

ACONITIC ACID.

M. Buchner, jun. has investigated the properties of this acid, which was first obtained by M. Peschier of Geneva in 1820, from the *Aconitum napellus* and *Aconitum paniculatum*. M. Reuss, having occasion to prepare a large quantity of the extract of aconite, obtained a considerable portion of a granular dirty white substance, consisting principally of aconite of lime, and this he sent to M. Buchner, who, in order to separate the aconitic acid from it, first washed it repeatedly with water and alcohol, to remove the extractive matter, and then dissolved it in dilute nitric acid. The solution being filtered, the aconitic acid was precipitated by excess of acetate of lead. The precipitate obtained, being well washed and separated by filtration, was diffused through distilled water, and submitted to a current of hydrosulphuric acid until the aconitate of lead was completely decomposed. The sulphuret of lead being separated, the liquor was evaporated with a gentle heat, and the aconitic acid formed a white granular crystalline mass. Some aconites are so rich in aconite of lime, that nearly as much may be obtained as of pure extract. In order to dry it sufficiently for analysis, the acid was dried in a current of air of the temperature of 248° Fahr. By combustion with oxide of copper the results obtained were,

Hydrogen	3.44	3.80
Carbon	41.01	41.84
Oxygen	55.55	54.36
	100.	100.

The composition of the acid as combined with oxide of silver, appeared to be

Hydrogen	2.23
Carbon	48.71
Oxygen	49.06

100.

From which it appears that the free acid is composed of

4 atoms of hydrogen	=	24.959	3.42
4 „ carbon	=	305.744	41.84
4 „ oxygen	=	400.000	54.74

$C^4 H^2 O^3 + H^2 O$	=	730.703	100.
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while the combined acid consists of

2 atoms of hydrogen	=	12.479	2.02
4 „ carbon	=	305.744	49.45
3 „ oxygen	=	300.000	48.53

$C^4 H^2 O^3$	=	618.223	100.
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