XIX.—*Note on Bromopicrin.*

By THOMAS BOLAS and C. E. GROVES.

HAVING occasion to prepare a considerable quantity of bromopicrin, we thought that it might be useful to state the most advantageous method, and also a few of its properties that have been hitherto undescribed.

This substance was discovered by Dr. Stenhouse in studying the action of bromine on picric acid,* but he found it better to prepare it in a manner similar to that employed for chloropicrin.

After numerous experiments we found the following to be the best process for its preparation: 4 parts of lime were slaked with 50 of water; the mixture was transferred to a glass flask; and when it was quite cold 6 parts of bromine were gradually added with constant agitation, great care being taken to prevent any rise of temperature; 1 part of picric acid was then added to the bromide of lime thus obtained, the mixture transferred to a metal vessel, and rapidly distilled. The whole of the bromopicrin was contained in the first fourth of the distillate, and after being separated from the water, was dried by chloride of calcium.

The quantity obtained by the above method varied from 46·5 to 49·5 per cent. of the bromine employed, the theoretical quantity, according to the subjoined equation, being 50·8:

In order to avoid loss of bromine and to obtain a pure product at one operation, it was found necessary to use rather more picric acid and considerably more lime than the above equation indicates.

On being subjected to analysis, it gave the following results:—

I. ·5537 grm. substance gave 1·0442 bromide of silver.

* Ann. Chem. Pharm., xci, 308.

		Theory.	I.	Stenhouse.	
C	12	4·03			
Br ₃	240	80·54	80·25	80·01	80·02
N	14	4·69			
O ₂	32	10·74			
		<hr/>			
		298	100·00		

Bromopicrin, as is well known, is liquid at ordinary temperatures, but we find that the pure substance, when cooled, solidifies to a mass of prismatic crystals which melt at 10°·25 C. It is necessary that the bromine employed in its preparation should be free from chlorine, as otherwise the product has a lower melting point, probably owing to the presence of chloropicrin.

Although bromopicrin, as Dr. Stenhouse has pointed out, is rapidly decomposed when heated to its boiling point, we find that, under the ordinary pressure, it may be distilled without change in a vacuum.

Bromopicrin is not decomposed by cold sulphuric acid, and is a remarkably heavy liquid, having a specific gravity of 2·811 at 12°·5 C. It has also a high dispersive power, and its refractive index for the line D at 20° C. is about 1·57. It is miscible in all proportions with benzol, bisulphide of carbon, tetrachloride of carbon, chloroform, light American oil, ether, and alcohol, from the latter of which it is precipitated by water. Iodine is slightly soluble in it, giving a violet-coloured solution, and it also possesses the property of dissolving indigo in small quantity. Naphthalin is exceedingly soluble in it, especially when warm.

Tetrabromide of Carbon.

By the action of powerful brominating agents on bromopicrin, we find that tetrabromide of carbon, CBr₄, is produced, and hope shortly to lay before the Society the details of its preparation and an account of its general properties. We have apparently succeeded in obtaining the same compound CBr₄, from carbonic disulphide, and from bromoform.