ON THE COMPOSITION OF UNFERMENTED WINES OF COMMERCE.

BY J. CARTER BELL.

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LATELY I have had some of these so-called wines to examine, which were alleged to be manufactured from the pure juice of the grape. My opinion is, and I think it will be shared by those who study the following analyses, that the juice of the grape is totally absent. These samples of wine have been made the subject of legal proceedings, and the defendants on cross-examination stated that they were made from sugar, crystallised tartaric acid, salicylic acid, and one-sixth of grape juice.

No. 1 bottle was labelled: "Unfermented Port Wine, manufactured from the juice of the grape, for family and sacramental purposes."

Specific gravity 1100.				100 volumes contain	
Volatile acid, calculated as acetic	..	..	..	..	·006
Tartaric acid	..	..	..	..	·502
Sugar (invert)	..	..	..	..	21·2
Ash..	..	..	..	..	·0395
Insoluble ash in water	..	..	..	..	·0185; or 46·8 per cent.
Soluble ash in water	..	..	..	..	·0210; or 53·1 ,,
Residue, dried at 230° F.	..	..	..	..	24·50
Salicylic acid	..	..	..	..	·02

The ash contained traces of chlorine, sulphuric acid, phosphoric acid and potash.

No. 2 bottle was labelled: "Unfermented Wine, Sherry, manufactured from the juice of the grape, for family and sacramental purposes."

Specific gravity 1098.					
Volatile acids, calculated as acetic	..	..	..	..	·006
Tartaric acid	..	..	..	..	·581
Sugar (invert)	..	..	..	..	22·900
Ash..	..	..	..	..	·019
Insoluble ash in water	..	..	..	..	·009; or 47·3 per cent.
Soluble ash in water	..	..	..	..	·010; or 52·6 ,,
Residue, dried at 230° F.	..	..	..	..	25·421
Salicylic acid	..	..	..	..	0·100

This ash also contained traces of sulphuric acid, phosphoric acid, potash and soda.

No. 3 bottle was labelled: "Unfermented Juice of the Vine, pure uncoloured virgin fruit of the vine, nutriment of the grape without the irritant, for sacramental and dietetic purposes, and in all cases where wine is generally used. This alone should be used where any wine is required."

Specific gravity 1120.

Volatile acids, calculated as acetic	..	..	..	..	..	·005
Sugar (invert)	..	..	..	..	..	28·502
Tartaric acid	..	..	..	..	..	·616
Ash..	..	..	..	..	..	·026
Insoluble ash in water	..	..	..	..	..	·012; or 46·1 per cent.
Soluble ash in water	..	..	..	..	..	·014; or 53·8 "
Residue, dried at 230°	..	..	..	..	..	29·821
Salicylic acid	..	..	..	..	..	·123

The price charged for these liquors was 2s. 6d. a bottle. I reported that they were merely solutions of sugar and tartaric acid, flavoured and coloured, and kept from fermenting by the addition of a little salicylic acid. I have made a partial analysis of the juice from black and white grapes to compare with the above.

Juice of Black English Grapes:—

Specific gravity 10835.

Residue at 212° F.	..	..	..	..	..	22·902
Residue at 230° F.	..	..	..	..	..	18·615
Sugar	..	..	..	..	..	13·210
Total free acid, calculated as tartaric	..	..	..	..	..	·700
Ash..	..	..	..	..	..	·356
Insoluble in water	..	..	..	..	..	·0336; or 9·43 per cent.
Soluble in water	..	..	..	..	..	·3224; or 90·56 "

Juice of White Almeria Grapes:—

Specific gravity 1071.

Residue at 212° F.	..	..	..	..	..	20·282
Residue at 230° F.	..	..	..	..	..	15·960
Sugar	..	..	..	..	..	12·60
Total free acid, calculated as tartaric	..	..	..	..	..	·60
Ash..	..	..	..	..	..	·331
Insoluble ash in water	..	..	..	..	..	·035; or 10·57 per cent.
Soluble ash in water	..	..	..	..	..	·296; or 89·42 "

I think it is very evident that one-sixth of grape juice is not in the so-called wines, for it would have raised the percentage of ash, and also have increased the percentage of solubility.

Mr. Heisch expressed his surprise that the case was taken into court. He could not understand what the nature and quality of an unfermented wine should be. In ancient time the juice of the grape was certainly looked upon as wine, but its keeping qualities were doubtful.

Mr. Allen thought it was clearly the purchaser's duty to take the matter into court. There was always some confusion in the English language between wine and vine, but if they called it unfermented wine it certainly represented that it was made from the vine.

Dr. Dupré regretted that such a case should have been brought into court. He himself was consulted by someone who wanted to institute a prosecution; he examined

some wine, and substantially agreed with Mr. Bell's analysis. His sample was almost free from potash, he could not detect any with the spectroscope, consequently it was not juice of the grape; but then came the question—Was it manufactured from the juice of the grape? Was it cane sugar inverted by the use of tartaric acid? It was impossible to say whether invert sugar was cane sugar inverted, or whether it was grape. In the second place, the tartaric acid was undoubtedly derived from the grape. The chemist cannot say that it is not a sugar of the grape; he has to admit that tartaric acid comes from the grape, and for that reason he (Dr. Dupré) declined to have anything to do with the case. He could not possibly prove that it was not the juice of the grape, although it was obviously an imposture.