

1788.  
Nov. 3.  
Mr Small on  
ventilation.

*Phys. Cl.* Mr DALZEL read an Essay on Ventilation, by ALEXANDER SMALL, Esquire.

Spirits distilled  
from carrots.

AT the same Meeting, a Report was presented from Dr BLACK, Dr HUTTON, and Mr RUSSELL, on Dr HUNTER and Mr HORNBY's process for producing an ardent spirit from carrots. [See *supra*, March 3. 1788.] The report is as follows :

WE have examined the sample of spirits, which was sent by Dr HUNTER of York to the Royal Society, and we have read the account of the experiment on the fermentation and distillation of carrots by which the said spirit was produced. The experiment was made by Mr THOMAS HORNBY, druggist in York, with one ton and eight stone of carrots, which, after being exposed to the air a few days to dry, weighed 160 stone, and measured 42 bushels; they were washed, topped and tailed, by which they lost in weight 11 stone, and in measure seven bushels; being then cut, they were boiled with the proportion of 24 gallons of water to one third of the above quantity of carrots, until the whole was reduced to a tender pulp, which was done in three hours boiling. From this pulp, the juice was easily extracted by means of a press, and 200 gallons of juice were produced from the whole. This juice was boiled again with one pound of hops five hours, and then cooled to 66 of FAHRENHEIT, and six quarts of yeast being added, it was set to ferment. The strong fermentation lasted 48 hours, during which time the heat abated to 58 of FAHRENHEIT; 12 gallons of unfermented juice, which had been reserved, were then heated and added to the liquor, the heat of which was thus raised again to 66, and the fermentation was renewed for 24 hours more, the air of the brewhouse being all this time at 46 and 44. The liquor was now turned, and continued to work three days from the bung; and, lastly, it was distilled, and the first distillation was rectified next day without any addition.

dition. The produce was twelve gallons, of the same quality with the sample.

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IN our examination of this sample, we found it resembled a corn spirit in flavour, but was equal to a corn spirit of the best kind, and it was a proof spirit.

THE refuse of the carrots weighed 48 stone, which, added to the tops and tails, made provision for hogs, beside the wash from the still, which measured 114 gallons.

FROM this experiment, Dr HUNTER draws the following comparison between the distillation of carrots and that of grain:

20 tons of carrots, which will make 200 gallons of proof spirits, may be bought for L. 16.

8 quarters of malt, or rather the materials for distillation, consisting of malt, wheat and rye, may be bought for L. 16, and will also make 200 gallons of proof spirit.

THE refuse from the carrots will be 960 stone, which, at 1 d. *per* stone, will sell for L. 4.

THE refuse or grains from the malt, &c. will be 64 bushels, each bushel weighing about 3 stone, which, at 1 d. *per* stone, will sell for 16 s.

THE Doctor, however, supposes, that the manufacturing of the spirit from carrots may be attended with more expence than the manufacturing of it from malt; but imagines that the greater value of the refuse may compensate for that expence, and that the saving of corn for other purposes, is an object worthy of attention and of encouragement.

(Signed)

JOSEPH BLACK.  
JAMES RUSSELL.  
JAMES HUTTON.

19th May 1788.

*Phyf. Cl.* Dr WILLIAM WRIGHT, F. R. S. Lond. read a Botanical and Medical Account of the Quassia Simaruba; which is printed in this volume. [No. X. *Phyf. Cl.*]

Dec: 1.  
Dr Wright on  
quassia simaru-  
ba.

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