EXAMINATION OF BEERS FROM BEERHOUSES AND BREWERS.

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I HAVE lately been making an investigation upon the beers sold in Salford by beerhouse keepers and also by brewers, and I may state that in no case have I found any serious adulteration, the only matter which I consider foreign is the large amount of common salt found in some of the beers; this was not as a rule put in by the beerseller, but by the brewer himself.

I have followed out the same plan here that I am accustomed to do in my milk examinations; if the beer from the beershop was suspicious, a sample was procured from the brewer, and in nearly all cases it was found identical with that which had been bought from the beershop.

In the examination of the beers for noxious materials I have used the following process kindly given to me by Dr. Dupré.

Two pints of the beer were evaporated to a thin syrup, to this was added one pint of pure rectified spirit, the spirit was added very gradually, stirring at the same time; when the whole of the spirit has been added, let the syrup mixture stand for about fifteen minutes, pour off the spirit and distil; the residue from the spirit is dissolved in water rendered alkaline with soda hydrate, and several times shaken up with ether. The ether solution contains the bitter principle of the hops, any alkaloids that might be present, resinous matter and fat. The alkaline solution is now acidified with acetic acid, and again shaken up with ether, the ether evaporated, the residue taken up with water and added to about a pint of water, into this water some small fish, such as minnows, are placed: if they live and are healthy, one may be certain that no dangerous alkaloids are present; if they should turn over upon their backs and die, it is evident that something is present which is foreign to good beer.

The following beers were bought for sixpenny beers. It will be seen that there is great variation in the quality, but in no case is there a beer with less original gravity than 1040, From this it would not be difficult to make a standard for beer.

The following samples were bought from beershops:—

Specific Gravity.	Proof Spirit	Specific Gravity of Residue made up to 100 c.c.	Extract per cent.	Ash per cent.	Salt, grains in gallon.	Acetic Acid per cent.	Original Gravity.
1009 ..	11.5 ..	1018 ..	4.60 ..	.25 ..	24.5 ..	.30 ..	1058.6
1010 ..	11.5 ..	1019 ..	4.75 ..	.25 ..	51.1 ..	.30 ..	1059.5
1010 ..	12.6 ..	1016 ..	5.52 ..	.37 ..	74.9 ..	.29 ..	1060.5
1007 ..	11.5 ..	1017 ..	3.7 ..	.30 ..	57.1 ..	.37 ..	1057.8
1007 ..	12.6 ..	1016 ..	5.54 ..	.20 ..	48.4 ..	.26 ..	1060.3
1008 ..	11.5 ..	1015 ..	4.75 ..	.20 ..	25.7 ..	.13 ..	1054.8
1008 ..	9.9 ..	1018 ..	4.0 ..	.12 ..	5.9 ..	.13 ..	1051.9
1007 ..	11.5 ..	1015 ..	4.52 ..	.42 ..	15.5 ..	.27 ..	1055.3
1012 ..	10.4 ..	1018 ..	5.89 ..	.25 ..	17.6 ..	.14 ..	1053
1027 ..	11.5 ..	1018 ..	5.76 ..	.34 ..	31.5 ..	.48 ..	1059.6
1010 ..	11.5 ..	1019.5 ..	4.86 ..	.32 ..	14.6 ..	.42 ..	1060.8
1010 ..	9.8 ..	1019.5 ..	4.76 ..	.16 ..	14.7 ..	.36 ..	1054
1008 ..	11.5 ..	1016 ..	3.81 ..	.26 ..	14.7 ..	.36 ..	1056.9
1010.5 ..	10.9 ..	1021 ..	4.89 ..	.36 ..	16.1 ..	.44 ..	1059.4
1012.5 ..	10.9 ..	1022 ..	5.16 ..	.37 ..	14.0 ..	.16 ..	1059.6
1011.5 ..	8.8 ..	1019 ..	4.61 ..	.36 ..	72.1 ..	.19 ..	1048.3
1006 ..	11.5 ..	1017 ..	3.96 ..	.42 ..	67.9 ..	.12 ..	1056.2
1009 ..	11.5 ..	1018 ..	4.39 ..	.35 ..	36.4 ..	.48 ..	1059.1
1012 ..	11.5 ..	1019 ..	4.96 ..	.27 ..	13.3 ..	.42 ..	1060.3
1010 ..	11.5 ..	1020 ..	5.26 ..	.36 ..	21.7 ..	.13 ..	1059.5
1009.5 ..	11.5 ..	1018.5 ..	4.79 ..	.39 ..	78.4 ..	.14 ..	1058
1015.5 ..	11.5 ..	1015 ..	3.66 ..	.38 ..	75.0 ..	.12 ..	1054.5
1007.5 ..	14.2 ..	1017 ..	2.82 ..	.28 ..	53.2 ..	.12 ..	1066.3
1012 ..	10.2 ..	1019 ..	4.38 ..	.37 ..	81.9 ..	.16 ..	1053.3
1010 ..	10.2 ..	1018 ..	4.53 ..	.31 ..	51.1 ..	.14 ..	1052.2
1010 ..	13.7 ..	1019.5 ..	4.90 ..	.33 ..	65.1 ..	.12 ..	1063.5
1023 ..	7.1 ..	1021.5 ..	4.97 ..	.28 ..	9.8 ..	.14 ..	1052
1013 ..	11.5 ..	1023 ..	5.88 ..	.45 ..	115.5 ..	.14 ..	1062.5
1014 ..	10.9 ..	1022 ..	5.62 ..	.22 ..	7.5 ..	.12 ..	1061.1
1009 ..	11.5 ..	1019.5 ..	5.20 ..	.45 ..	86.8 ..	.12 ..	1059
1007.5 ..	9.3 ..	1014.5 ..	3.52 ..	.24 ..	12.6 ..	.14 ..	1045.5
1012.5 ..	10.9 ..	1020 ..	5.47 ..	.13 ..	42.7 ..	.12 ..	1057.3
1019 ..	8.8 ..	1026 ..	6.46 ..	.33 ..	11.2 ..	.21 ..	1055.5

Comparison of samples of beer obtained from brewers and dealers respectively :—

	Specific Gravity.	Proof Spirit.	Specific Gravity of Residue made up to 100 c.c.	Extract per cent.	Ash per cent.	Salt, grains in gallon.	Acetic Acid per cent.	Original Gravity.
Brewer ..	1013	10.1	1021	5.20	.23	56.7	.24	1055.8
Dealer ..	1010	10.2	1019	4.85	.22	55.3	.18	1053.4
Brewer ..	1014	11.5	1017	5.60	.21	48.3	.24	1057.2
Dealer ..	1008	10.4	1016	4.85	.32	43.4	.29	1052.3
Brewer ..	1015	10.1	1023	6.91	.26	37.8	.20	1057.5
Dealer ..	1012	10.7	1018	5.93	.33	39.2	.20	1065.7
Brewer ..	1021.5	7.5	1027	7.20	.30	62.3	.18	1053.7
Dealer ..	1011	13.7	1016	4.18	.33	129.5	.27	1064.1
Brewer ..	1015.5	10.1	1024	6.10	.26	43.4	.27	1058.9
Dealer ..	1008	10.2	1018	4.59	.34	69.3	.25	1052.8
Brewer ..	1009	10.1	1018	4.46	.26	44.8	.18	1052.4
Dealer ..	1010	11.5	1018	4.94	.34	42.6	.27	1058.4
Brewer ..	1010	10.1	1018	4.50	.20	7.0	.12	1052.4
Dealer ..	1009	10.2	1016	4.34	.24	20.3	.25	1050.9
Brewer ..	1010	10.1	1018	4.16	.16	15.4	.18	1052.4
Dealer ..	1011	9.3	1018	4.72	.27	23.8	.20	1049.5
Brewer ..	1016	12.6	1024	6.36	.36	100.1	.24	1067.7
Dealer ..	1010	13.1	1017	4.80	.40	103.6	.37	1063.7
Brewer ..	1013	11.5	1022	4.49	.32	30.8	.42	1063.3
Dealer ..	1007	14.2	1018	5.96	.20	29.0	.17	1067.6
Brewer ..	1015.5	9.8	1023.5	5.81	.23	46.2	.12	1058.3
Dealer ..	1015	9.3	1021.5	2.97	.31	11.9	.14	1052.5
Brewer ..	1008.5	11.5	1018	3.92	.38	69.3	.31	1058.6
Dealer ..	1009	11.5	1018.5	4.50	.38	80.5	.48	1040.1
Brewer ..	1011.5	10.9	1016	5.10	.32	26.2	.36	1054.9
Dealer ..	1009	11.5	1018.5	4.56	.38	80.5	.48	1060.1
Brewer ..	1011.5	10.9	1016	5.10	.32	26.2	.36	1054.9
Dealer ..	1011.5	9.3	1019	4.85	.33	37.1	.16	1054.4

It appears from the above tabular statement that beer is generally sold by the dealers in nearly the same state as they receive it from the brewers. The discrepancies in the analyses of brewers and dealers samples may be accounted for by the sample being obtained from the brewer many days after the dealer's sample was obtained.