THE PUBLIC WATER SUPPLIES OF ENGLAND.

VALUATION, ACCORDING TO "WIGNER'S VALUATION SCALE," OF THE VARIOUS WATER SUPPLIES.

	Average for 1881.	January 1882.	Feb. 1882.
LONDON—			
Kent	29·5	36·5	34·0
New River	24·7	35 0	24·0
East London	33·2	40·0	64·0
Southwark and Vauxhall	34·3	44·0	35·0
West Middlesex	33·0	40·0	29·0
Grand Junction	30·3	41·0	29·0
Lambeth	35·7	40·0	36·0
Chelsea	34·0	48·0	31·0
Bath	12·0		
Birmingham	34·6	36·0	33·0
Bolton	22·7	27 0	26·0
Bradford	48·3		
Brighton	23·9	27·0	32·0
Bristol	25·1	25·0	26·0
Bury	29·5	36·0	
Cambridge	25·3	23·0	24·0
Canterbury	16·0	15·0	20·0
Coventry	32 5		
Croydon	23·1	24·0	24·0
Darlington	54·2	57·0	100·0
Derby	17·6		
Doncaster	35 0		
Droitwich	39·0		
Dublin	18·5	16·0	42·0
Dudley	45·0		
Edinburgh	25·9	21·0	39·0
Exeter	20·2	20·0	18·0
Grantham	32·9	31·0	27·0
Guildford			29·0
Hastings	26·2		22·0
Huddersfield	24·3		
Hull	22·7		
Huntingdon			37·0
Ipswich	27·7	29·0	27·0
King's Lynn	96·6	103·0	80·0
Leamington	25·5		23·0
Leeds	32·8		
Leicester	33·1		34·0
Liverpool	36·3	48·0	27·0
Llandrindod	13·0		
Maidstone—			
Water Company	30·5	31·0	37·0
„ Public Conduit	26·3	27·0	30·0
Manchester	25·7	30·0	27·0
Newark	38·4	30·0	29·0
Newcastle-on-Tyne	43·6	41·0	33·0
Northampton	39·5		
Norwich	36·6	32·0	35·0
Nottingham	45·6	35·0	37·0
Oldham	23·6		
Plymouth	28·7		
Pontefract	171·0		
Portsmouth	27·4	25·0	26·0
Reading	25·8	31·0	29·0
Rochdale	8·4	8·0	11·0
Rotherham	18·9		
Rugby	47·0	45·0	68·0
Salford	19 9	15·0	22·0
Sevenoaks	19·9		
Sheffield	21·4		
Shrewsbury	22·6		25·0
Southampton	42·6	44·0	36·0
Stockport	17·4		
Stourbridge	37·3		
Stourport	27·0		
Sunderland	25·0		
Swansea	15·1	16·0	12·0
Tunbridge Wells	35·0		
Warwick	36·1	27·0	
Whitehaven	10·0	7·0	13·0
Wolverhampton	38·7		
Worcester	54·9		

We give above a list of all the towns whose water supplies have been examined and reported upon during the last year, together with the average valuation of the impurities in each supply for the year. We also give the usual valuation of the month's supplies. We are compelled to defer making any remarks on these valuations until our next number.

At a recent meeting of the Middlesex Magistrates, Mr. A. G. Crowder moved:—"That the inspectors under the Sale of Food and Drugs Act, 1875, be instructed to make a practice of submitting for analysis, each quarter, samples of intoxicants of all kinds, also a larger number of samples of food and drugs than heretofore." He said the Act had been in force about six years, and was intended to have a general application to all food and drugs; but he had observed that in the matters referred for analysis, a large proportion were as to the purity of samples of milk, while no mention whatever was made of whisky or other intoxicants chiefly in use amongst the poorer classes, and he thought there ought not to be only an analysis of these intoxicants, but also of ale and porter. Sir W. H. Wyatt said as the analysis of each sample cost a guinea, if there were an increased number it would entail a serious expense, and he thought this was a subject that should be referred to the Committee of Accounts and General Purposes Committee for consideration, and he moved an amendment to that effect. The Chairman put the motion, and the amendment was carried.

SOCIETY OF PUBLIC ANALYSTS.

Analyses of English Public Water Supplies in February, 1882. All results are expressed in GRAINS PER GALLON.

Description of Sample.	Date when drawn.	Appearance in Two-foot Tube.	Smell when heated to 100° Fahr.	Chlorine in Chlorides.	Phosphoric Acid in Phosphates.	Nitrogen in Nitrates.	Ammonia.	Albuminoid Ammonia.	Oxygen, Absorbed in		Hardness, Clark's Scale, in degrees.		Total Solid Matter, dried at 220° Fahr.	Microscopical Examination of Deposit.	ANALYSTS.
									15 mins. at 80° Fahr.	4 hours at 80° Fahr.	Before Boiling.	After Boiling.			
Kent Co.	Feb. 23	c. yellow blue	none	2·05	none	·83	·0008	·0032	·004	·012	23·6°	7·0°	32·2	veg. debris	Wigner & Harland.
New River	,, 15	clear	none	1·12	trace	·31	·0021	·0042	·009	·025	15·5°	4·5°	22·4	satisfactory	B. Dyer.
East London	,, 14	yellow blue	slight	1·42	h. trace	·53	·0012	·0163	·036	·048	15 0°	6·0°	22·8	animal., veg. deb., fibres	Wigner & Harland.
Southwark & Vauxhall	,, 24	p. yell. & clear	none	1·24	trace	·14	none	·0040	·039	·074	15·5°	4·5°	21·2	satisfactory	J. Muter.
West Middlesex	,, 20	greenish	none	1·20	trace	·09	·0130	·0044	·021	·037	14·0°	3·0°	21·0	satisfactory	O. Hehner.
Grand Junction	,,	p. yellow tint		1·15	trace	·24	·0057	·0058	·031	·102	15 1°	4·0°	20·9		A. Wynter-Blyth.
Lambeth	,, 24	p. yell. & clear	none	1·49	trace	·15	·0050	·0050	·033	·065	16·0°	4·5°	23·2	satisfactory	J. Muter.
Chelsea	,, 13	c. p. green	none	1·19	trace	·19	·0014	·0042	·003	·086	19 0°	5·0°	23·2		A. Dupré.
Birmingham	Feb. 6	c. yell. green	none	1·47	trace	·23	·0020		·024	·047	8·9°	7·1°	19·6	none	A. Hill.
Brighton	,, 8	yellow blue	none	2·13	none	·38	·0011	·0014	·018	·022	16 0°	5·0°	22·8	animal., veg. deb., fibres	Wigner & Harland.
Bolton	,, 10	s. turbid	none	·42	none	·04	·0024	·0040	·020	·037	3·4°	3·4°	8·1	mineral and veg. debris	W. H. Watson.
Bristol	,, 13	p. brnsh. green	none	·68	trace	·06	·0002	·0035	·020	·041	17·9°	1·8°	22·0	sand and veg. debris	F. W. Stoddart.
Bury (Lan.)	,, 11	s. turbid	s. mossy	·88	none	·04	·0038	·0098	·024	·044	4·7°	4·5°	7·8	mineral and veg. debris	W. H. Watson.
Cambridge	,, 15	c. pale blue	none	1·40	traces	·46	·0030	·0020	·005	·012	·16°	5·5°	25·0	satisfactory	J. West Knights.
Canterbury	,, 21	c. pale blue	none	1·47	none	·33	·0050	·0050	·004	·005	6·6°	3·6°	12·0	s. mineral	S. Harvey.
Croydon	,, 21	brgt. colourless	none	1·12	traces	·09	·0030	·0060	·009	·009	16·0°	4·5°	26·0	satisfactory	C. Heisch.
Darlington	,, 17	c. yellow	s. peaty	·70	traces	none	trace	·0077	·140	·218	5·0°	4·5°	8·1	satisfactory	W. F. K. Stock.
Edinburgh	,, 9	v. s. brown	none	·72	none	trace	·0040	·0016	·096		4·2°	4·0°	5·2	none	J. Falconer King.
Exeter	,, 11	f. brnsh. yellow	none	·91	trace	·15	·0007	·0004	·015	·030	2·9°	2·9°	7·0	none	F. P. Perkins.
Grantham	,, 13	c. p. blue	none	·10	trace	·62	·0011	·0014	·009	·009	15 0°	4·7°	23·0	diatoms	A. Ashby.
Guildford	,, 10	f. grnsh. yell.	none	1·09	trace	·17	·0043	·0042	·021	·028	15·5°	6·7°	23·8	satisfactory	A. Angell.
Hastings	,, 20	c. blue	none	4·50	trace	·03	·0021	·0028	·001	·008	6 0°	3·5°	22·1	none	H. F. Cheshire.
Huntingdon	,, 13	c. p. blue	none	1·96	trace	·17	·0015	·0070	·024	·044	18·0°	7·5°	38·5	satisfactory	J. West Knights.
Dublin	Jan. 30	s. yellow	none	·89	trace	trace	·0015	·0045	·056	·196	1·4°	·6°	4·2	satisfactory	C. A. Cameron.
Ipswich	Feb. 18	c. colourless	none	2·35	trace	·32	·0037	·0045	·001	·005	22·0°	3·9°	32 8	satisfactory	J. Napier.
King's Lynn	,, 7	drty. mlky. wht.	earthy	1·62	trace	·28	·0018	·0056	·182	·266	16·5°	5·5°	24·6	veg. debris, diatoms, &c.	W. Johnstone.

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									15 mins. at 80° Fahr.	4 hours at 80° Fahr.	Before Boiling.	After Boiling.			
Leamington ..	Feb. 16	c. greenish	none	1·54	none	none	·0021	·0028	none	none	24·8°	11·9°	25·9	none	A. Bostock Hill.
Leicester.....	,, 20	v. s. yellow	none	1·55	trace	·08	·0013	·0062	·027	·091	8·7°	5·5°	14·4	satisfactory	W. M. Emmerson.
Liverpool	,, 17	yellow green	s. peaty	1·02	trace	·04	·0014	·0070	·110	·063	4·8°	3·7°	7·2		A. Smetham.
Maidstone—															
Wtr. Company	,, 15	p. green s. turb.	none	2·93	trace	·57		·0021	·018	·024	21·3°	8·6°	38·0	none	M. A. Adams.
Public Conduit	,, 15	c. p. blue	none	2·71	trace	·72		·0007	·003	·018	20·0°	7·7°	31·6	none	M. A. Adams.
Manchester....	,, 23	s. turb. f. yell.	none	·74	none	none	·0030	·0028	·024	·092	1·8°	1·6°	4·7	s. mineral	W. Thomson.
Newark	,, 11	c. p. green	none	1·12	trace	·05	·0019	·0037	·015	·036	17·0°	12·5°	33·7	satisfactory	A. Ashby.
Newcastle-on-Tyne.....	,, 8	f. yellow	none	·91	trace	·04	·0010	·0080	·051	·091	16·4°	5·9°	21·2	satisfactory	J. Pattinson.
Norwich	,, 13	p. grnsh. yellow	none	1·75	trace	·04	trace	·0044	·036	·047	14·0°	3·7°	16·5	satisfactory	W. G. Crook.
Nottingham ..	,, 16	c. p. blue	none	1·56	none	1·24	·0007	·0064	·004	·004	16·0°	5·0°	21·6	veg. deb., sand, anl. fibres	Wigner & Harland.
Portsmouth ..	,, 4	v. s. turbid	none	1·26	trace	·18	trace	·0042	none	none	13·4°	2·0°	18·5	decomp. veg. deb. diatoms	W. J. Sykes.
Reading	,, 9	c. f. green	none	1·95	none	·12	·0007	·0049	·023	·085	14·6°	4·0°	18·9	satisfactory	J. Shea.
Rochdale	,, 19	greenish	none	·65	none	·01	·0038	·0040	·001	·004	4·0°	2·8°	5·6	satisfactory	T. A. Collinge.
Rugby	,, 10	v. f. turbid	none	1·21	trace	·30	·0105	·0168	·019	·100	10·0°	9·0°	16·8	veg. deb., sand, diatoms	A. P. Smith.
Salford	,, 8	c. yellow	none	·60	none	none	·0028	·0035	·017	·112	3·0°	2·5°	6·0	none	J. Carter Bell.
Shrewsbury ..	,, 18	c. colourless	none	1·45	trace	·33	·0025	·0060	none	·004	22·0°	6·0°	25·0	none	T. P. Blunt.
Southampton..	,, 14	grnsh. yellow	none	·98	h. traces	·17	·0036	·0086	·011	·080	12·6°	5·0°	20·0	satisfactory	A. Angell.
Swansea	,, 17	clear	none	·90	trace	none	·0007	·0056	·003	·004	1·4°	1·4°	3·6	none	W. Morgan.
Whitehaven ..	,, 10	c. f. green	none	·39	none	·01	none	·0014	·007	·022	·4°	·4°	2·2	veg. deb., diatoms	A. Kitchin.

Abbreviations:—c., clear; f., faint; h., heavy; p., pale; v. h., very heavy; v. s., very slight.

A UNIVERSAL FLUX FOR SILVER ASSAYS.

George L. Stone, 1879, gives us a universal flux for the assay of basic silver ores. Its composition is as follows—

Soda	...	...	9 parts.
Borax Glass	...	...	3 ,,
Argol	...	...	1 part.

Mix thoroughly and keep on hand ready for use. For one third assay ton of ore, fill the crucible about two-thirds full of the flux, adding two or three iron nails when the ore contains much sulphur.—*Columbia College School of Mines Quarterly.*

The Testing of Oil of Bitter Almonds.—This substance is frequently adulterated with artificial oil of bitter almonds (essence of mirbane or nitro-benzol). This adulteration is best detected by the reaction by which it yields aniline under the influence of nascent hydrogen, which the genuine oil does not. The test is applied in the following manner: To an alcoholic solution of the oil some fragments of granulated zinc are added, and then about half its volume of strong hydrochloric acid, after which the solution is gently warmed. An energetic reaction ensues, which should be allowed to proceed for about five minutes. The liquid which now contains, if nitro-benzol was present, chloride of aniline is poured off from any undissolved zinc and treated with an excess of strong solution of caustic potash until the precipitate at first formed is redissolved. The aniline thus set free is extracted from the liquid by agitation with ether, the ethereal layer is removed, placed in a test-tube with an equal bulk of water and a few drops of a cold solution of bleaching powder added, when a splendid mauve coloration will be produced, the intensity of which depends upon the amount of nitro-benzol, originally present in the sample under examination. Boyveau gives the following as the characters of the genuine oil: The specific gravity varies from 1·043 to 1·060, while some specimens of the spurious oils had a specific gravity of 1·019 to 1·030. The genuine oil, if mixed with an equal volume of sulphuric acid, turns red but remains limpid and clear. The spurious oil, on the other hand, turns dark red in color and then becomes brown, at the same time becoming dull and thick, and finally congealing to a brownish mass.—*Sanitary Engineer of New York.*
