

# Summary of Statistics of Pollution of Schuylkill River.

Investigations made from December 19th, 1883, to January 14th, 1884.

## DISTRICTS.

ITEMS.	FIRST. (Whole Valley above Reading.)	SECOND. (From Upper Boundary of Reading to Mouth of Manatawny Creek.)	THIRD. (From above Manatawny Creek to intake of Phoenixville Water Works.)	FOURTH. (From Phoenixville Water Works to Norristown Water Works.)	FIFTH. (From Norristown Water Works to Conshohocken Water Works.)	SIXTH. (From Conshohocken Water Works to Roxborough Pumping Station.)	SEVENTH. (From Roxborough Pumping Station to Fairmount Water Works.)
Drainage Area.....	656.9 sq. mls.	{ 398.0 sq. mls. 1,054.9 "	{ 149.4 sq. mls. 1,204.3 "	{ 517.6 sq. mls. 1,721.9 "	{ 29.5 sq. mls. 1,751.4 "	{ 36.5 sq. mls. 1,789.9 "	{ 74.0 sq. mls. 1,863.9 "
Population.....	91,000	{ 86,000 177,000	{ 25,500 202,500	{ 64,500 267,000	{ 19,500 286,500	{ 16,200 302,700	{ 48,800 351,500
DOMESTIC SEWAGE.							
Daily Water Supply,* Representing Domestic Waste Water.....	2,600,000 gals.	{ 4,500,000 gals. 7,100,000 "	{ 200,000 gals. 7,300,000 "	{ 475,000 gals. 7,775,000 "	{ 950,000 gals. 8,725,000 "	{ 75,000 gals. 8,800,000 "	
Population having Direct Water-closet Drainage, <sup>c,d</sup> .....	4,300	{ 600 4,900	{ 500 5,400	{ 1,950 7,350	{ 1,300 8,650	{ 675 9,325	{ 1,700 11,025
Population having Indirect or Filtered Water-closet Drainage—Privies on Banks of Streams, Cesspools with Overflows to Sewers or Streams, etc., <sup>d</sup> .....	2,500	{ 200 2,700	{ 300 3,000	{ 200 3,200	{ 1,750 <sup>e</sup> 4,950	{ 150 5,100	{ 1,100 6,200
Population having complete Drainage by Water Carriage to the River, <sup>f</sup> .....	2,500	{ 150 2,650	{ 250 2,900	{ 1,000 3,900	{ 150 4,050	{ 100 4,150	{ 100 4,250
Population having Direct Drainage for Wash Water only, <sup>f</sup> .....	1,500	{ 250 1,750	{ 200 1,950	{ 400 2,350	{ 700 3,050	{ 100 3,150	{ 400 3,550
Population having Gutter Drainage for Wash Water, <sup>f</sup> .....	15,000	{ 15,000 30,000	{ 2,000 32,000	{ 3,500 35,500	{ 5,000 40,500	{ 2,000 42,500	{ 2,500 45,000

Figures in Red Ink indicate totals down to the lower end of the district represented by the column in which they occur.

a From public supply only.  
 b Perkiomen Water-shed above Schuylkill not included in the remainder of this column.  
 c Including population in mills having privies over streams, or water-closets discharging directly into them.  
 d Estimated from data obtained from manufacturers, borough surveyors and other local authorities, and from observation.  
 e Including Insane Asylum at Norristown.  
 f Estimated from data obtained from borough surveyors and other local authorities, and from observation.

MATERIALS USED IN MANUFACTORIES DISCHARGING WASTES INTO STREAMS.	FIRST DISTRICT.	SECOND DISTRICT.	THIRD DISTRICT.	FOURTH DISTRICT.	FIFTH DISTRICT.	SIXTH DISTRICT.	SEVENTH DISTRICT.
<b>WOOLEN MILLS.</b>							
Number.....	0	4	2 6	2 8	8 16	3 19	15 35
Quantity of Wool scoured per day.....		284 lbs. 366 "	6 lbs. 284 " 372 "	22 lbs. 135 " 305 " 507 "	12,315 lbs. 12,621 " 507 "	6,900 lbs. 19,421 " 507 "	73,400 lbs. 92,821 " 507 "
Quantity of Soda Ash used per day.....		5 " 2 "	5 " 2 "	5 " 2 "	361 " 6 " 366 " 8 "	366 " 8 "	340 " 6 " 706 " 14 "
Quantity of Tallow used per day.....		8 lbs.	3 " 8 " 3 "	3 " 8 " 6 "	128 " 19 " 136 " 25 "	89 " 33 " 216 " 58 "	560 " 260 " 776 " 418 "
Quantity of Potash used per day.....					68 "	68 "	68 "
Quantity of Caustic Soda used per day.....		2 lbs.	.5 " 2.5 "	.5 " 3 "	22 " 4 " 22 " 7 "	16 " 6 " 38 " 13 "	184 " 38 " 197 "
<b>PAPER MILLS.</b>							
Number.....	0	4	2 6	6 12	2 14	2 16	5 21
Quantity of Cloth Rags (foreign) used per day.....						1,700 lbs.	1,700 lbs.
Quantity of Cloth Rags (domestic) used per day.....		8,500 lbs. 2,000 "	8,500 lbs. 2,500 " 4,500 "	822 lbs. 9,322 " 4,500 " 11,600 "	9,322 lbs. 4,500 " 11,600 "	6,850 " 16,172 " 4,500 " 11,600 "	18,000 " 34,172 " 4,500 " 3,580 " 15,180 "
Quantity of Paper Rags used per day.....							
Quantity of Wood (mostly Poplar) used per day.....			8 cords.	8 cords.	8 cords.	8 cords.	54 cords. 62 "
Quantity of Wood Pulp used per day.....							3,430 lbs.
Quantity of Jute Botts used per day.....					11,000 lbs. 5,000 "	1,700 lbs. 12,700 "	12,700 " 5,000 "
Quantity of Jute Sacks used per day.....		5,000 lbs.	5,000 lbs.	5,000 lbs.	5,000 "	5,000 "	5,000 " 6,430 "

Figures in Bold Face indicate totals given to the lower end of the district represented by the column in which they occur.  
Figures in Italic Face indicate estimates based on data obtained from similar works.

MATERIALS USED IN MANUFACTORIES DISCHARGING WASTES INTO STREAMS.	FIRST DISTRICT.	SECOND DISTRICT.	THIRD DISTRICT.	FOURTH DISTRICT.	FIFTH DISTRICT.	SIXTH DISTRICT.	SEVENTH DISTRICT.
<i>PAPER MILLS.—Continued.</i>							
Quantity of Lime used per day.....	{ 2,500 lbs. 325 "	{ 5,000 lbs. 650 "	{ 533 lbs. 8,033 " 975 "	{ 1,400 lbs. 9,433 " 975 "	{ 2,700 lbs. 12,133 " 975 "	{ 31,000 lbs. 3,000 "	{ 43,133 " 3,975 "
Quantity of Soda Ash used per day.....	100 "	{ 2,000 " 120 "	{ 411 " 2,411 " 220 "	{ 55 " 2,456 " 220 "	{ 2,456 " 220 "	{ 3,400 " 12,000 "	{ 5,856 " 12,220 "
Quantity of Chloride of Lime used per day.....	{ 1,400 " 100 "	{ 2,000 " 120 " 3,400 " 220 "	{ 123 " 3,523 " 220 "	{ 4,330 " 7,853 " 220 "	{ 515 " 8,368 " 220 "	{ 7,540 " 15,908 " 220 "	{ 7,540 " 15,908 " 220 "
Quantity of Copperas used per day.....		100 lbs.	{ 60 " 100 " 25 " 125 "	{ 60 " 100 " 125 "	{ 60 " 100 " 130 " 255 "	{ 60 " 100 "	{ 60 " 100 "
Quantity of Alum used per day.....			200 lbs.	200 lbs.	200 lbs.	200 "	200 "
Quantity of Rosin used per day.....			29 "	29 "	29 "	29 "	29 "
Quantity of Clay used per day.....			3 "	3 "	3 "	3 "	3 "
Quantity of Yellow Ochre used per day.....			2 "	2 "	2 "	2 "	2 "
Quantity of "Orange Mineral" used per day.....							
Quantity of "Ultra Marine" or Antiline Blue used per day.....			3 lbs.				
Quantity of Water used per day.....	755,000 <sup>a</sup> gals.	755,000 <sup>a</sup> gals.	{ 575,000 <sup>b</sup> gals. 1,331,000 <sup>c</sup> "	{ 1,331,000 <sup>c</sup> gals.	{ 500,000 <sup>b</sup> gals. 1,831,000 <sup>c</sup> "	{ 2,070,000 <sup>a</sup> gals. 3,901,000 <sup>e</sup> "	
<i>Dye Houses, Generally in connection with Woollen or Cotton Mills.</i>							
Number.....	0	4	{ 2 6	{ 7 14	{ 7 21	{ 26 <sup>f</sup> 47 <sup>f</sup>	
Quantity of Acetic Acid used per day.....						11 lbs.	
Quantity of Muriatic Acid used per day.....							19 "
Quantity of Oxalic Acid used per day.....				4 lbs.			{ 33 " 37 "
Quantity of Tartaric Acid used per day.....							3 "

<sup>a</sup> By two mills only. <sup>b</sup> By one mill only. <sup>c</sup> By three mills only. <sup>d</sup> By four mills only. <sup>e</sup> By six mills only. <sup>f</sup> Besides two from which statistics were not obtained.

<sup>g</sup> Figures in Red Ink indicate totals down to the lower end of the district represented by the column in which they occur. <sup>h</sup> Figures Underlined indicate estimates based on data obtained from similar works.

MATERIALS USED IN MANUFACTORIES DISCHARGING WASTES INTO STREAMS.	FIRST DISTRICT.	SECOND DISTRICT.	THIRD DISTRICT.	FOURTH DISTRICT.	FIFTH DISTRICT.	SIXTH DISTRICT.	SEVENTH DISTRICT.
<i>Dye Houses.—Continued.</i>							
Quantity of Alum used per day.....				14 lbs.	14 lbs.	14 lbs.	{ 116 lbs. 130 "
Quantity of Aniline Dyes used per day.....		1 lb.	1 lb.	1 lb.	{ 3 " 4 "	{ 2 " 6 "	{ 118 " 124 "
Quantity of Mercurate of Antimony used per day.....							5 "
Quantity of Oxymuriate of Antimony used per day.....							2 gal.
Quantity of Butter of Antimony used per day.....							27 lbs.
Quantity of Aqua Ammonia used per day.....					15 lbs.	15 lbs.	{ 228 " 243 "
Quantity of Aqua Fortis used per day.....							42 "
Quantity of Archil Liquor used per day.....							674 "
Quantity of Quercitron Bark (extract) used per day.....						8 lbs.	{ 248 " 256 "
Quantity of Oak Bark used per day.....		1 lb.	1 lb.	1 lb.	1 lb.	1 "	1 "
Quantity of Barwood used per day.....							24 "
Quantity of Bichromate of Potash used per day.....		{ 3 lbs. 1 "	{ 3 lbs. 1 "	{ 0.5 lbs. 3.5 " 1 "	{ 16.5 lbs. 20 "	{ 20 lbs. 1 "	{ 101 " 121 " 1 "
Quantity of Black Dye used per day.....							40 "
Quantity of Blue Stone (Blue Vitriol) used per day.....		{ 3 lbs. 1 "	{ 3 lbs. 1 "	{ 3 lbs. 1 "	{ 45 lbs. 48 " 1 "	{ 25 lbs. 73 " 1 "	{ 227 " 300 " 1 "
Quantity of Borax used per day.....							3 "
Quantity of Brimstone used per day.....							245 "
Quantity of Berberapping used per day.....							3 "
Quantity of Camwood used per day.....							17 "
Quantity of Catechu (Catch) used per day.....						5 lbs.	{ 12 lbs. 17 "
Quantity of Caustic Soda used per day.....							{ 339 " 356 "
							124 "

Key: Figures in Red Ink indicate total shown in the lower end of the district represented by the column in which they occur. Grey Figures in Blue Ink indicate separate estimates based on data obtained from similar works.

\* For three or four months in the year only.

MATERIALS USED IN MANUFACTORIES DISCHARGING WASTES INTO STREAMS	FIRST DISTRICT.	SECOND DISTRICT.	THIRD DISTRICT.	FOURTH DISTRICT.	FIFTH DISTRICT.	SIXTH DISTRICT.	SEVENTH DISTRICT.
DYE HOUSES.—Continued.							
Quantity of Chloride of Lime used per day.....							205 lbs.
Quantity of Chrome used per day.....					14 lbs.	14 lbs.	{ 35 " { 49 "
Quantity of Pipe Clay used per day.....							36 "
Quantity of Cochineal used per day.....			2 lb.	{ 0.5 lbs. { 1.5 "	1.5 lbs.	1.5 lbs.	{ 17 " { 18.5 "
Quantity of Muriate of Copper used per day.....							3 "
Quantity of Copperas used per day.....					33 lbs.	{ 59 lbs. { 72 "	{ 45 " { 117 "
Quantity of Cream of Tartar used per day.....							16 "
Quantity of Cudbear used per day.....							8 "
Quantity of Fluorine used per day.....							4 "
Quantity of Fustic (Extract) used per day.....							94 "
Quantity of Fustic (Chipped) used per day.....		1 lb.	1 lb.	1 lb.	{ 86 lbs. { 67 "	67 lbs.	{ 56 " { 143 "
Quantity of Fuller's Earth used per day.....							7 "
Quantity of Gambier used per day.....							2 "
Quantity of Glauber's Salts used per day.....							733 "
Quantity of Gum Substitute used per day.....							60 "
Quantity of Hyperic (Chipped) used per day.....							109 "
Quantity of Indigo used per day.....							136 "
Quantity of Indigo Extract, Neutral, used per day.....							187 "
Quantity of Indigo Extract, Acid, used per day.....							19 "
Quantity of Indigo Auxiliary (Zinc) used per day.....							25 "
Quantity of Iron Liquor used per day.....					0.5 gal.	0.5 gal.	{ 6 gals. { 6.5 "
Quantity of Muriate of Iron used per day.....							3 lbs.

Figures in Parenthesis denote tons down to the lower end of the district represented by the returns in which they occur.

MATERIALS USED IN MANUFACTORIES DISCHARGING WASTES INTO STREAMS.	FIRST DISTRICT.	SECOND DISTRICT.	THIRD DISTRICT.	FOURTH DISTRICT.	FIFTH DISTRICT.	SIXTH DISTRICT.	SEVENTH DISTRICT.
<i>DYE HOUSES.—Continued.</i>							
Quantity of Nitrate of Iron used per day.....					70 lbs.	70 lbs.	70 lbs.
Quantity of Litharge used per day.....							1 "
Quantity of Lignum-wood used per day.....							16 "
Quantity of Lime used per day.....							52 "
Quantity of Logwood, Extract, used per day.....		{ 40 lbs. 13 "	{ 40 lbs. 13 "	{ 40 lbs. 13 "	{ 309 lbs. 349 "	{ 270 lbs. 619 "	{ 1,577 "
Quantity of Logwood, Extract, (liq'd) used per day.....		{ 16 lbs. 5 "	{ 13 lbs. 29 "	{ 29 lbs. 5 "	{ 40 lbs. 29 "	{ 950 lbs. 979 "	{ 2,750 "
Quantity of Logwood, Chipped, used per day.....							{ 20 "
Quantity of Madler used per day.....							{ 3,729 "
Quantity of Nut Gall used per day.....							{ 65 "
Quantity of Paris White used per day.....							56 "
Quantity of Red Liquor used per day.....							3 "
Quantity of Red Sanders-wood used per day.....							82 "
Quantity of Red Sanders-wood used per day.....							3 gals.
Quantity of Sal Soda used per day.....			{ 1 lb.	{ 3 lbs. 3 "	{ 143 lbs. 146 "	{ 146 lbs. 1 "	{ 380 "
Quantity of Soda Ash used per day.....					27 "	{ 40 "	{ 526 "
Quantity of Stannate of Soda used per day.....							{ 1 "
Quantity of Sumac, Powdered, used per day.....							{ 782 "
Quantity of Sumac, Extract, used per day.....					40 lbs.	40 "	{ 849 "
Quantity of Muriate of Tin used per day.....						43 lbs.	2 "
Quantity of Tin Crystals used per day.....						40 "	{ 150 "
							{ 193 "
							{ 348 "
							{ 388 "
							40 "
							30 "

Figures in *Red Ink* indicate totals shown in the lower end of the district represented by the column in which they occur.

*Red* Figures in *Red Ink* indicate estimates based on data obtained from similar works.

MATERIALS USED IN MANUFACTORIES DISCHARGING WASTES INTO STREAMS.	FIRST DISTRICT.	SECOND DISTRICT.	THIRD DISTRICT.	FOURTH DISTRICT.	FIFTH DISTRICT.	SIXTH DISTRICT.	SEVENTH DISTRICT.
<i>Dye Houses.—Continued.</i>							
Quantity of Turmeric used per day.....			1 lb.	1 lb.	{ 14 lbs. 15 "	15 lbs.	{ 578 " 593 "
Quantity of Vitriol, Oil of, used per day.....							6 lbs.
Quantity of Whiting used per day.....							7 "
Quantity of Yel. Prussiate of Potash used per day.....							10 "
Quantity of various kinds other than Logwood used per day.....						90 lbs.	{ 150 " 240 "
<b>PRINT WORKS.</b>							
Number.....						1	1
Product per day.....						40,000 yds.	40,000 yds.
Quantity of Muriatic Acid used per day.....						200 lbs.	200 lbs.
Quantity of Oxalic Acid used per day.....						240 "	240 "
Quantity of Tartaric Acid used per day.....						1 "	1 "
Quantity of Alum used per day.....						9 "	9 "
Quantity of Aniline Dyes used per day.....						3 "	3 "
Quantity of Aniline Oil used per day.....						14 "	14 "
Quantity of Antimony used per day.....						3 "	3 "
Quantity of Aqua Fortis used per day.....						85 "	85 "
Quantity of Barwood used per day.....						390 "	390 "
Quantity of Bi-chromate of Potash used per day.....						195 "	195 "
Quantity of Blue Vitriol used per day.....						16 "	16 "
Quantity of Catechu (Cutch) used per day.....						6 "	6 "
Quantity of Chlorate of Potash used per day.....						3 "	3 "
Quantity of Chloride of Lime used per day.....						72 "	72 "
Quantity of Citron Bark (Extract) used per day.....						33 "	33 "
Quantity of Copperas used per day.....						13 "	13 "
Quantity of Gambier used per day.....						281 "	281 "
Quantity of Indigo used per day.....						128 "	128 "

\* Figures in Parenthesis denote the lower end of the district represented by the column in which they occur.

\* Not including one large and one small house from which statistics were not obtained.

MATERIALS USED IN MANUFACTORIES DISCHARGING WASTES INTO STREAMS.	FIRST DISTRICT.	SECOND DISTRICT.	THIRD DISTRICT.	FOURTH DISTRICT.	FIFTH DISTRICT.	SIXTH DISTRICT.	SEVENTH DISTRICT.
<b>PAINT WORKS.—Continued.</b>							
Quantity of Indigo Auxiliary (Zinc) used per day.....						95 lbs.	95 lbs.
Quantity of Iron Liquor used per day.....						2 gals.	2 gals.
Quantity of Lime used per day.....						260 lbs.	260 lbs.
Quantity of Litharge used per day.....						4 "	4 "
Quantity of Logwood, Extract, used per day.....						280 "	280 "
Quantity of Oil of Vitriol used per day.....						300 "	300 "
Quantity of Sal Soda used per day.....						83 "	83 "
Quantity of Soap used per day.....						6 "	6 "
Quantity of Soda Ash used per day.....						483 "	483 "
Quantity of Sugar of Lead (brown) used per day.....						42 "	42 "
Quantity of Sumac, Dry, used per day.....						105 "	105 "
Quantity of Sumac, Extract, used per day.....						57 "	57 "
Quantity of Sulphur used per day.....						185 "	185 "
Quantity of Tin (bar) used per day.....						4 "	4 "
Quantity of Tin Crystals used per day.....						0.75 "	0.75 "
Quantity of Yel. Prussiate of Potash used per day.....						1 "	1 "
<b>GAS WORKS.</b>							
Number.....	3	{ 2 5	{ 2 7	{ 1 8	{ 1 9	{ 1 10	{ 2 12
Average Product per day.....	55,000 <sup>a</sup> cu. ft.	{ 130,000 cu. ft. 185,000 "	{ 27,000 cu. ft. 212,000 "	{ 9,000 cu. ft. 231,000 "	{ 60,000 cu. ft. 281,000 "	{ 25,000 cu. ft. 306,000 "	{ 45,000 cu. ft. 351,000 "
Quantity of Crude Petroleum used per day.....		725 gals.	725 gals.	725 gals.	725 gals.	725 gals.	725 gals.
Quantity of Naphtha or Benzine used per day.....	917 <sup>a</sup> gals.	{ 150 " 150 " 917 <sup>k</sup> "	{ 100 " 150 " 1,017 <sup>l</sup> "	{ 150 " 150 " 1,167 <sup>m</sup> "	{ 1,000 " 150 " 2,167 <sup>n</sup> "	{ 400 " 150 " 2,567 <sup>o</sup> "	{ 200 " 350 " 2,567 <sup>p</sup> "
Quantity of very thick, pulpy Waste discharged into the river per day.....		180 "	180 "	180 "	180 "	180 "	180 "

<sup>a</sup> Figures in Item 18k indicate tons down to the lower end of the district represented by the column in which they occur.

<sup>b</sup> Figures in parentheses indicate estimates based on data obtained from similar works.

<sup>c</sup> By one only; others very small. <sup>d</sup> By three only. <sup>e</sup> By five only. <sup>f</sup> By six only. <sup>g</sup> By seven only. <sup>h</sup> By eight only. <sup>i</sup> By nine only. <sup>j</sup> By one only; other uses coal. <sup>k</sup> By nine only. <sup>l</sup> By two only. <sup>m</sup> By four only.

MATERIALS USED IN MANUFACTORIES DISCHARGING WASTES INTO STREAMS.	FIRST DISTRICT.	SECOND DISTRICT.	THIRD DISTRICT.	FOURTH DISTRICT.	FIFTH DISTRICT.	SIXTH DISTRICT.	SEVENTH DISTRICT.
Gas Works—Continued.							
Quantity of thick but less pulpy matter, (chiefly Tar,) discharged into the river per day.....				4 gals.	$\left\{ \begin{array}{l} 17 \text{ gals.} \\ 4 \\ 17 \end{array} \right.$	$\left\{ \begin{array}{l} 0 \text{ gals.} \\ 4 \\ 17 \end{array} \right.$	$\left\{ \begin{array}{l} 0 \text{ gals.} \\ 4 \\ 17 \end{array} \right.$
Quantity of thin, tarry, and oily liquid, (mostly water,) discharged into the river per day.....	$\left\{ \begin{array}{l} 160 \text{ gals.} \\ 160 \\ 5,000 \end{array} \right.$	$\left\{ \begin{array}{l} 550 \text{ gals.} \\ 710 \\ 5,000 \end{array} \right.$	$\left\{ \begin{array}{l} 710 \\ 5,000 \end{array} \right.$	$\left\{ \begin{array}{l} 710 \\ 5,000 \end{array} \right.$	$\left\{ \begin{array}{l} 710 \\ 5,000 \end{array} \right.$	$\left\{ \begin{array}{l} 710 \\ 5,000 \end{array} \right.$	$\left\{ \begin{array}{l} 710 \\ 5,000 \end{array} \right.$
TANNERIES.							
Number.....	5	$\left\{ \begin{array}{l} 7 \\ 12 \end{array} \right.$	$\left\{ \begin{array}{l} 2 \\ 14 \end{array} \right.$	$\left\{ \begin{array}{l} 4 \\ 18 \end{array} \right.$	18	18	18
Average number of Cattle Hides used per day.....	$\left\{ \begin{array}{l} 16 \\ 4 \end{array} \right.$	$\left\{ \begin{array}{l} 36 \\ 52 \\ 4 \end{array} \right.$	$\left\{ \begin{array}{l} 52 \\ 4 \end{array} \right.$	$\left\{ \begin{array}{l} 4.5 \\ 2.5 \\ 56.5 \\ 6.5 \end{array} \right.$	$\left\{ \begin{array}{l} 56.5 \\ 6.5 \end{array} \right.$	$\left\{ \begin{array}{l} 56.5 \\ 6.5 \end{array} \right.$	$\left\{ \begin{array}{l} 56.5 \\ 6.5 \end{array} \right.$
Average number of Calf-skins used per day.....	41	$\left\{ \begin{array}{l} 71 \\ 25 \\ 71 \\ 66 \end{array} \right.$	$\left\{ \begin{array}{l} 71 \\ 66 \end{array} \right.$	$\left\{ \begin{array}{l} 2 \\ 9 \\ 73 \\ 75 \end{array} \right.$	$\left\{ \begin{array}{l} 73 \\ 75 \end{array} \right.$	$\left\{ \begin{array}{l} 73 \\ 75 \end{array} \right.$	$\left\{ \begin{array}{l} 73 \\ 75 \end{array} \right.$
Average number of Sheep-skins used per day.....		170	170	170	170	170	170
Average quantity of Lime used per day.....	160 lbs.	$\left\{ \begin{array}{l} 43 \text{ lbs.} \\ 160 \\ 43 \\ 320 \end{array} \right.$	$\left\{ \begin{array}{l} 43 \text{ lbs.} \\ 320 \end{array} \right.$	$\left\{ \begin{array}{l} 22 \text{ lbs.} \\ 27 \\ 65 \\ 347 \end{array} \right.$	$\left\{ \begin{array}{l} 65 \text{ lbs.} \\ 347 \end{array} \right.$	$\left\{ \begin{array}{l} 65 \text{ lbs.} \\ 347 \end{array} \right.$	$\left\{ \begin{array}{l} 65 \text{ lbs.} \\ 347 \end{array} \right.$
Average quantity of Hen Manure used per day.....	1.5 bush.	$\left\{ \begin{array}{l} 2 \text{ bush.} \\ 3.5 \end{array} \right.$	3.5 bush.	$\left\{ \begin{array}{l} 0.20 \text{ bush.} \\ 0.25 \\ 0.20 \\ 3.75 \end{array} \right.$	$\left\{ \begin{array}{l} 0.20 \text{ bush.} \\ 3.75 \end{array} \right.$	$\left\{ \begin{array}{l} 0.20 \text{ bush.} \\ 3.75 \end{array} \right.$	$\left\{ \begin{array}{l} 0.20 \text{ bush.} \\ 3.75 \end{array} \right.$
Average quantity of Bark used per day.....	13,000 lbs.	$\left\{ \begin{array}{l} 5,500 \text{ lbs.} \\ 11,000 \\ 5,500 \\ 24,000 \end{array} \right.$	$\left\{ \begin{array}{l} 5,500 \text{ lbs.} \\ 24,000 \end{array} \right.$	$\left\{ \begin{array}{l} 4,100 \text{ lbs.} \\ 5,500 \\ 28,100 \end{array} \right.$	$\left\{ \begin{array}{l} 5,500 \text{ lbs.} \\ 28,100 \end{array} \right.$	$\left\{ \begin{array}{l} 5,500 \text{ lbs.} \\ 28,100 \end{array} \right.$	$\left\{ \begin{array}{l} 5,500 \text{ lbs.} \\ 28,100 \end{array} \right.$
SOAP WORKS.							
Number.....	1	1	1	1	1	1	1
Average quantity of Grease used per day.....		240 lbs.	240 lbs.	240 lbs.	240 lbs.	240 lbs.	240 lbs.
Average quantity of Caustic Soda used per day.....		75 "	75 "	75 "	75 "	75 "	75 "
Average quantity of Sal Soda used per day.....		55 "	55 "	55 "	55 "	55 "	55 "

Age Figures in Row 18 indicate totals down to the lower end of the district represented by the column in which they occur.

Day Figures UNDERSCORED indicate estimates based on data obtained from similar works.

a By one only; others very small. b By one only; other uses coal. c Probably very little, if any pollution. d One claims no pollution; the other very little. e Not in operation.

MATERIALS USED IN MANUFACTORIES DISCHARGING WASTES INTO STREAMS.	FIRST DISTRICT.	SECOND DISTRICT.	THIRD DISTRICT.	FOURTH DISTRICT.	FIFTH DISTRICT.	SIXTH DISTRICT.	SEVENTH DISTRICT.
<b>SOAP WORKS.—Continued.</b>							
Average product (Hard Soap) per day.....		410 lbs.	410 lbs.	410 lbs.	410 lbs.	410 lbs.	410 lbs.
Average quantity of Spent Lye discharged into the river per day.....		19 gals.	19 gals.	19 gals.	19 gals.	19 gals.	19 gals.
<b>GLUE WORKS.</b>							
Number.....	1	{ 1 2	2	2	2	2	2
Quantity of "Hide Stock" (Scraps from Cattle Hides and Feet) used per day.....		2,500 lbs. <sup>a</sup>	2,500 lbs. <sup>a</sup>	2,500 lbs. <sup>a</sup>	2,500 lbs. <sup>a</sup>	2,500 lbs. <sup>a</sup>	2,500 lbs. <sup>a</sup>
Quantity of Beef Legs used per day.....	700 lbs. <sup>a</sup>	{ 2,500 <sup>a</sup> 2,500 <sup>a</sup> 700 <sup>a</sup>	{ 2,500 <sup>a</sup> 700 <sup>a</sup>	{ 2,500 <sup>a</sup> 700 <sup>a</sup>	{ 2,500 <sup>a</sup> 700 <sup>a</sup>	{ 2,500 <sup>a</sup> 700 <sup>a</sup>	{ 2,500 <sup>a</sup> 700 <sup>a</sup>
Quantity of Lime used per day.....		122 <sup>a</sup>	122 <sup>a</sup>	122 <sup>a</sup>	122 <sup>a</sup>	122 <sup>a</sup>	122 <sup>a</sup>
Quantity of Oil of Vitriol used per day.....		100 <sup>a</sup>	100 <sup>a</sup>	100 <sup>a</sup>	100 <sup>a</sup>	100 <sup>a</sup>	100 <sup>a</sup>
<b>NEATS-FOOT OIL WORKS.</b>							
Number.....	1	1	1	1	1	1	1
Quantity of Beef Legs, Bones, and other Butchers' Offal used per day.....		500 lbs.	500 lbs.	500 lbs.	500 lbs.	500 lbs.	500 lbs.
Quantity of Oil produced per day.....		3 gals.	3 gals.	3 gals.	3 gals.	3 gals.	3 gals.
<b>BREWERIES.</b>							
Number.....	3	{ 6 9	{ 1 20	10	{ 1 11	11	{ b 3 b 14
Product per day.....		{ 247 bbls. 247 <sup>c</sup>	{ 14 bbls. 261 <sup>c</sup>	261 <sup>c</sup> bbls.	{ 10 bbls. 271 <sup>c</sup>	271 <sup>c</sup> bbls.	{ 95 bbls. 366 <sup>c</sup>
Quantity of Water used per day.....		{ 28,000 gals. 16,000 <sup>a</sup>					
<b>MALT HOUSES.</b>							
Number.....		3	3	3	3	3	3
Quantity of Grain per day.....		{ 100 bush. 150 <sup>a</sup>	{ 100 bush. 150 <sup>a</sup>	{ 100 bush. 150 <sup>a</sup>	{ 100 bush. 150 <sup>a</sup>	{ 100 bush. 150 <sup>a</sup>	{ 100 bush. 150 <sup>a</sup>
<b>DISTILLERY.</b>							
Quantity of Whiskey produced per day.....		500 gals.	500 gals.	500 gals.	500 gals.	500 gals.	500 gals.

<sup>a</sup> Figures in Red Ink indicate tons down to the lower end of the district represented by the column in which they occur.

<sup>b</sup> Figures in Black Ink indicate estimates based on data obtained from similar works.

<sup>a</sup> During four months of the year only. <sup>b</sup> Including one not in operation. <sup>c</sup> Not including three in the First District, <sup>d</sup> Not including three in the First District and one in the Seventh.

MATERIALS USED IN MANUFACTORIES DISCHARGING WASTES INTO STREAMS	FIRST DISTRICT.	SECOND DISTRICT.	THIRD DISTRICT.	FOURTH DISTRICT.	FIFTH DISTRICT.	SIXTH DISTRICT.	SEVENTH DISTRICT.
<b>WOOL HAT FACTORIES.</b>							
Number.....	17	17	17	17	17	17	17
Product per day.....	{ 11,140 4,270 }	{ 11,140 4,270 }	{ 11,140 4,270 }	{ 11,140 4,270 }	{ 11,140 4,270 }	{ 11,140 4,270 }	{ 11,140 4,270 }
Quantity of Folling Soap used per day.....	{ 40 lbs. 426 "	{ 40 lbs. 426 "	{ 40 lbs. 426 "	{ 40 lbs. 426 "	{ 40 lbs. 426 "	{ 40 lbs. 426 "	{ 40 lbs. 426 "
Quantity of Copperas used per day.....	{ 33 " 360 "	{ 33 " 360 "	{ 33 " 360 "	{ 33 " 360 "	{ 33 " 360 "	{ 33 " 360 "	{ 33 " 360 "
Quantity of Logwood used per day.....	{ 33 " 360 "	{ 33 " 360 "	{ 33 " 360 "	{ 33 " 360 "	{ 33 " 360 "	{ 33 " 360 "	{ 33 " 360 "
Quantity of Blue Vitriol used per day.....	{ 17 " 180 "	{ 17 " 180 "	{ 17 " 180 "	{ 17 " 180 "	{ 17 " 180 "	{ 17 " 180 "	{ 17 " 180 "
Quantity of Water used per day, mostly in washing and falling hats.....	400,000 gals.	400,000 gals.	400,000 gals.	400,000 gals.	400,000 gals.	400,000 gals.	400,000 gals.
<b>FUR HAT FACTORY.</b>							
Product per day.....	17	17	17	17	17	17	17
Quantity of Chipped Logwood used per day.....	50 lbs.	50 lbs.	50 lbs.	50 lbs.	50 lbs.	50 lbs.	50 lbs.
Quantity of Chipped Rustic used per day.....	3 "	3 "	3 "	3 "	3 "	3 "	3 "
Quantity of Cudbear used per day.....	1.5 "	1.5 "	1.5 "	1.5 "	1.5 "	1.5 "	1.5 "
Quantity of Hypernic used per day.....	2.5 "	2.5 "	2.5 "	2.5 "	2.5 "	2.5 "	2.5 "
Quantity of Oil of Vitriol used per day.....	2 "	2 "	2 "	2 "	2 "	2 "	2 "
<b>SLAUGHTER HOUSES.</b>							
Number.....	<sup>b</sup> 6	<sup>c</sup> <sub>6</sub> <sup>b</sup>	<sup>c</sup> <sub>6</sub> <sup>b</sup>	<sup>c</sup> <sub>6</sub> <sup>b</sup>	<sup>b</sup> <sub>6</sub> <sup>b</sup>	<sup>c</sup> <sub>11</sub> <sup>b</sup>	<sup>c</sup> <sub>11</sub> <sup>b</sup>
Number of Cattle slaughtered per day.....	<sup>b</sup> 5	<sup>b</sup> 5	<sup>b</sup> 5	<sup>b</sup> 5	<sup>b</sup> 6	<sup>b</sup> 6	<sup>b</sup> 6
Number of Hogs slaughtered per day.....	<sup>b</sup> 50	<sup>b</sup> 50	<sup>b</sup> 50	<sup>b</sup> 50	<sup>b</sup> 59	<sup>b</sup> 59	<sup>b</sup> 59

Figures in Parenthesis down to the lower end of the district represented by the column in which they occur. Figures in Square Brackets indicate estimates based on data obtained from similar works.

<sup>a</sup> In summer only. <sup>b</sup> Not including many small places. <sup>c</sup> No large establishments.

MATERIALS USED IN MANUFACTORIES DISCHARGING WASTES INTO STREAMS.	FIRST DISTRICT.	SECOND DISTRICT.	THIRD DISTRICT.	FOURTH DISTRICT.	FIFTH DISTRICT.	SIXTH DISTRICT.	SEVENTH DISTRICT.
ROLLING MILLS.							
Number.....	1	{ 6 7	{ 4 11	{ 2 13	{ 2 15	{ 1 16	{ 0 16
Quantity of Oil used on rolls per day.....	2 gals.	{ a 2 gals. b 4 "	{ a 1 gal. b 5 "	c 5 gals.	{ 10 gals. 15 "	d 15 gals.	d 15 gals.
TACK WORKS.							
Number .....					1	1	1
Quantity of Oil of Vitriol wasted per day.....					1 gal.	1 gal.	1 gal.

Figures in brackets indicate roads down to the lower end of the district represented by the column in which they occur.

\* By one only.    b By two only.    c By three only.    d By five only.