

land and Durham, and the next largest, 33, in South Wales.

Miners.—In the census returns of 1871 there were 376,783 persons distinguished as "miners," the number comprising 371,105 males and 5678 females. At the preceding census of 1861 there were 330,446 persons enumerated as "miners," of whom 330,352 were males and only 94 females. Thus there was a total increase of 46,337 persons so designated, comprising 40,753 males and 5584 females, in the ten years from 1861 to 1871. There were besides enumerated as "workers in stone and clay," 152,673 at the census of 1871, comprising 149,567 males and 3106 females. At the census of 1861 the total number of persons so classified was 144,773, so that there was an increase of 7900 persons in the decennial period.

V. Textile Manufactures.—Fisheries.

Origin of the cotton manufacture.

There were two agencies, one moral and the other material, that gained for England its comparatively modern superiority in manufactures. Long after textile and other industries had been flourishing in the leading states of the Continent,—the Netherlands, Flanders, and France,—England remained a purely agricultural and pastoral country, content to export her riches in wool, and to import them again, greatly enhanced in value, as clothing. Thus it remained till religious persecution drove the flower of the industrial population of the West of Europe away from the homes of their birth; and, happy to find an asylum here, they liberally repaid English hospitality by establishing their own arts in the country, and teaching them to the inhabitants. Thus religious liberty formed the noble foundation of England's industrial greatness. Then came the material agent, machinery propelled by steam. The invention of the steam engine, following quickly upon that of the carding machine, the spinning jenny, and other ingenious machinery employed in textile manufactures, gave an extraordinary impulse to their development, and, with them, that of kindred branches of industry. At the basis of all of them was England's wealth in coal.

Faventions for spinning cotton.

Cotton Manufacture.—That England, not possessing the raw material, became the seat of the cotton manufacture, was owing, in the first instance, to the ingenuity of her inventors of machinery. Established as early as the beginning of the 17th century at Manchester, the cotton manufacture made no progress for a long time, and generation after generation clothed themselves in cotton goods spun by Dutch and German weavers. It was not till the latter part of the 18th century, when a series of inventions, unparalleled in the annals of industry, followed each other in quick succession, that the cotton manufacture took real root in the country, gradually eclipsing that of other European nations. But though the superior excellence of their machinery enabled Englishmen to start in the race of competition, it was the discovery of the new motive power, drawn from coal, which made them win the race. In 1815 the total quantity of raw cotton imported into the United Kingdom was not more than 99 millions of pounds, which amount had increased to 152 millions of pounds in 1820, and rose further to 229 millions in 1825, so that there was considerably more than a doubling of the imports in ten years. In 1830 the imports of raw cotton had further risen to 264 millions of pounds, in 1835 to 364 millions, and in 1840 to 592 millions of pounds.

The following table shows the progress, with fluctuations, of the cotton trade, in the annual imports, the exports, and the excess of imports of raw cotton during each, for every fifth year from 1841 to 1876 :—

Years.	Total imports of raw Cotton.	Total exports of raw Cotton.	Excess of imports.
1841	487,992,355	37,673,585	450,318,770
1846	487,856,274	65,930,732	401,925,542
1851	757,379,749	111,980,394	645,399,355
1856	1,023,886,304	146,660,864	877,225,440
1861	1,256,984,736	298,287,920	958,696,816
1866	1,377,514,096	388,981,936	988,532,160
1871	1,778,139,776	362,075,616	1,416,064,160
1876	1,487,858,848	203,305,872	1,284,552,976

There were 2655 cotton factories in the United Kingdom at the end of 1874. They had 41,881,789 spindles and 463,118 power-looms, and gave employment to 479,515 persons, of whom 187,620 were males and 291,895 females. The following statement gives the number of cotton factories in England—there are none in Wales—distinguishing those devoted to spinning and to weaving, and the total—including those both spinning and weaving, and all others—at various periods, from 1850 to 1874 :—

Years.	Number of Factories.		Total number of Cotton Factories.
	Spinning.	Weaving.	
1850	762	229	1,753
1856	910	419	2,046
1861	1,079	722	2,715
1868	1,041	632	2,405
1870	1,085	649	2,371
1874	1,172	600	2,542

The following table shows the number of spindles used in the cotton factories of England, distinguishing those for spinning and for doubling—the total including all others—at various annual periods from 1850 to 1874 :—

Years.	Number of Spindles.		Total Number of Spindles.
	Spinning.	Doubling.	
1850	8,685,392	10,055,410	19,173,969
1856	15,260,777	10,557,799	25,818,576
1861	15,077,299	13,274,346	28,351,925
1868	14,827,226	15,651,002	30,478,228
1870	17,302,982	15,309,505	32,613,631
1874	21,449,102	14,585,130	36,034,232

The subjoined table exhibits the number of power-looms used in the cotton factories of England, both weaving and of power spinning and weaving, at various annual periods from 1850 to 1874 :—

Years.	Weaving.	Spinning and Weaving.	Total Number of Power Looms.
1856	65,880	209,609	275,590
1861	131,554	235,268	366,125
1868	137,892	206,827	344,719
1870	175,432	235,904	411,336
1874	170,665	260,724	431,389

The following table gives the number of persons, male and female, employed in the cotton factories of England at various periods from 1850 to 1874 :—

Year.	Males.	Females.	Total.
1850	131,610	160,052	291,662
1856	148,354	192,816	341,170
1861	173,704	233,894	407,598
1868	152,656	204,396	357,052
1870	171,793	243,177	414,970
1874	180,607	259,729	440,336

Of the males employed in 1874 there were 33,342 under thirteen years of age, and 37,016 from thirteen to eighteen

See also the separate articles on the different textile manufactures.

years of age,—the rest, 110,249, being above eighteen years. Of the 259,729 females employed in cotton factories in 1874 there were 32,637 under thirteen years of age.

The cotton factories were distributed as follows over England at the end of 1874 :—

Counties.	Number of Factories.	Number of Power Looms.	Number of Persons Employed.
Middlesex, Surrey, and Kent	18	18	397
Gloucester, Hereford, Salop, Stafford, Worcester, and Warwick	19	3,000	5,278
Leicester, Rutland, Lincoln, and Notts	43	41	4,632
Cheshire	184	29,948	36,485
Lancashire	1,911	373,061	352,003
Derbyshire	72	7,608	10,091
Yorkshire	278	15,147	28,669
Durham, Northumberland, Cumberland, and Westmoreland	14	2,382	2,478
Essex, Suffolk, and Norfolk	3	184	303
Total	2,542	431,389	440,336

It will be seen that Lancashire absorbs more than three-fourths of the manufacture of cotton fabrics in England.

Woolen and Worsted.—Second only to the cotton trade as a national industry is the manufacture of woolen and worsted textile fabrics. There were in 1874 in the United Kingdom 1800 woolen and 692 worsted factories. In the woolen factories there were in use 3,323,881 spindles and 57,090 power-looms, and they employed 134,605 persons; while in the worsted factories there were in use 2,382,450 spindles and 81,747 power-looms, and they employed 142,097 persons. Unlike cotton, the raw material for woolen fabrics is mainly produced at home; still for many years past the native supply has been insufficient, which necessitated imports from foreign countries and British colonies, ever increasing in amount. During 1840–1876 the imports of wool rose from 49 to 390 millions of pounds.

The following table exhibits the imports of wool into the United Kingdom from foreign countries and British colonies, the amount of re-exports, and the net balance of imports, for every fifth year from 1841 to 1876 :—

Years.	Total Imports of Wool.	Total Exports (Foreign and Colonial).	Net Imports.
1841	56,170,974	2,553,671	53,617,303
1846	65,255,462	3,011,930	62,243,482
1851	83,311,975	13,729,937	69,581,988
1856	116,211,392	26,679,793	89,531,599
1861	147,172,841	54,377,104	92,795,737
1866	239,358,689	66,573,488	172,785,201
1871	323,036,299	134,866,304	188,169,995
1876	390,055,759	173,020,372	217,035,387

Of the 1800 woolen factories in existence in the United Kingdom at the end of 1874, England and Wales had 480; and of the 692 worsted factories, England and Wales had 239. The following table shows the number of woolen factories in England and Wales, the number of spindles and of power-looms in use, and the number of persons employed, at various annual periods from 1850 to 1874 :—

Years.	Number of Woolen Factories.	Number of Spindles.	Number of Power Looms.	Number of Persons Employed.
1850	1,306	1,356,691	9,170	64,423
1856	1,410	1,499,949	13,726	69,130
1861	1,456	1,846,350	20,344	76,309
1868	1,420	4,222,916	42,571	101,938
1870	1,550	2,681,931	37,356	100,640
1874	1,483	2,604,610	45,025	105,371

Number of woolen factories.

Imports of wool.

Woolen factories in England and Wales.

The subjoined table gives similar details regarding the worsted factories in England and Wales :—

Years.	Number of Worsteds Factories.	Number of Spindles.	Number of Power Looms.	Number of Persons Employed.
1850	493	864,874	32,617	78,915
1856	508	1,298,326	38,809	36,690
1861	512	1,245,526	42,968	82,972
1868	687	2,149,024	71,556	128,410
1870	599	1,766,636	63,443	103,514
1874	648	2,128,890	75,591	131,830

The number of persons employed in the woolen factories of England and Wales in 1874 comprised 54,119 males and 51,252 females. Of the males, 4391 were under thirteen years of age, 10,726 from thirteen to eighteen years of age, and 93,002 above eighteen. Of the females, 2841 were under thirteen, and 48,411 over thirteen years of age. In the worsted factories, the persons employed in 1874 comprised 53,995 males and 77,835 females. Of the males, 14,074 were under thirteen, 10,694 were from thirteen to eighteen, and 29,227 above eighteen years of age. Of the females, 15,394 were under thirteen, and 62,441 over thirteen years of age. It will be seen that the number of children, of both sexes, is far greater comparatively in the worsted than in the woolen factories.

The following table exhibits the distribution of the woolen factories over England and Wales, giving the number in different counties, with power-looms and persons employed, at the end of 1874 :—

Counties	Number of Factories.	Number of Power Looms.	Number of Persons Employed.
Herts, Bucks, Oxford, Northampton, Hants, Bedford, and Cambridge	10	231	984
Wilts, Dorset, Devon, Cornwall, and Somerset	69	2,586	7,695
Gloucester, Hereford, Salop, Stafford, Worcester, and Warwick	36	1,226	4,978
Leicester, Rutland, Lincoln, and Notts	8	...	315
Cheshire	11	130	538
Lancashire	98	9,023	11,822
Derbyshire	3	2	21
Yorkshire	936	30,684	75,354
Durham, Northumberland, Cumberland, and Westmoreland	36	559	1,555
Middlesex, Surrey, and Kent	6	...	116
Wales and Monmouth	269	584	1,190
Total	1,483	45,025	105,371

The worsted factories were thus distributed over England—there are none in Wales—at the end of 1874 :—

Counties.	Number of Factories.	Number of Power Looms.	Number of Persons Employed.
Middlesex, Surrey, and Kent	6	31	129
Essex, Suffolk, and Norfolk	11	563	1,042
Wilts, Dorset, Devon, Cornwall, and Somerset	4	...	564
Gloucester, Hereford, Salop, Stafford, Worcester, and Warwick	40	1,731	7,089
Leicester, Rutland, Lincoln, and Notts	13	...	1,825
Lancashire	46	6,758	5,317
Yorkshire	520	65,789	114,388
Durham, Northumberland, Cumberland, and Westmoreland	7	635	1,351
Derbyshire	1	84	125
Total	648	75,591	131,830

Distribution of woolen factories.

Distribution of worsted factories.

The preceding tables show that the chief seat of the woollen and worsted manufacture is in Yorkshire, while Lancashire stands second, but a long way behind. In the western and some of the midland counties where the trade is carried on, it is on a very reduced scale, as the factories have no power-looms. The eastern counties likewise have at present but a very small share of the trade, which is now all but extinct in Norwich, the most ancient manufacturing town in the kingdom, where a colony of Flemings settled in the reign of Henry I., getting the long wool spun at the neighbouring market-town of Worstead, after which the new produce was named. The once famous market town itself has sunk to an obscure village.

Number of silk factories.

Silk.—Compared with the manufacture of goods made from cotton and wool, that of other textile fabrics is comparatively unimportant, the main articles being silk, flax, and hemp. As far as the United Kingdom is concerned, the manufacture of flax stands first among these minor textile fabrics; but taking England alone, the chief of them is silk. There were in 1874 in the United Kingdom 818 silk factories, with 1,336,411 spindles and 10,002 power-looms, employing 45,559 persons. Of this total, only 4 factories, with 226 power-looms, employing 740 persons, were in Scotland; and but 2 factories, with 7 power-looms, employing 400 persons, were in Ireland.

Silk factories in England.

The following table shows the number of silk factories in England, with the number of spindles and power-looms in use, and the number of persons employed, at various periods from 1850 to 1874:—

Years.	Number of Silk Factories.	Number of Spindles.	Number of Power Looms.	Number of Persons Employed.
1850	272	1,188,908	6,092	41,703
1856	454	1,063,555	9,260	55,300
1861	761	1,305,910	10,635	51,191
1868	587	968,182	14,511	39,956
1870	692	929,157	12,135	47,311
1874	812	1,103,893	9,759	44,419

The number of persons employed in the silk factories of England in 1874 comprised 12,772 males and 31,647 females. Of the males, 2324 were under thirteen, 2375 from thirteen to eighteen, and 8073 over eighteen years of age. Of the females, 4521 were under thirteen. The employment of children of both sexes in silk factories was on the decrease from 1850 to 1874, while during the same period it was largely on the increase in cotton factories, and also, but to a smaller degree, in the woollen and worsted manufacture.

Distribution of silk factories over England.

The following table shows the distribution of silk factories over the various counties of England—there are none in Wales—with the number of power-looms in use and of persons employed, at the end of the year 1874:—

Counties.	Number of Silk Factories.	Number of Power Looms.	Number of Persons Employed.
Middlesex, Surrey, and Kent	10	52	297
Herts, Bucks, Oxford, Northampton, Hunts, Beds, and Cambridge	6	..	1,162
Essex, Suffolk, and Norfolk	19	2,109	5,815
Wilts, Dorset, Devon, Cornwall, Somerset, and Hants	20	449	2,940
Gloucester, Hereford, Salop, Stafford, Worcester, and Warwick	518	1,876	7,909
Leicester, Rutland, Lincoln, and Notts	16	74	911
Cheshire	147	1,735	11,841
Lancashire	24	2,666	5,376
Derbyshire	22	48	2,479
Yorkshire	30	750	5,689
Total	812	9,759	44,419

It will be seen from the above table that the silk manufacture is more dispersed over England than either that of cotton or woollen fabrics. The tendency to use machinery appears most pronounced in Lancashire and the three eastern counties, in both of which districts the number of power-looms is nearly half as large as that of hands employed; while in other counties the number of power-looms is very small in proportion to that of workers.

Linen.—Next to silk in importance, as one of the minor textile manufactures of England, stands flax. At the end of 1874, there were in the whole of the United Kingdom 449 factories for spinning flax, using 1,473,800 spindles and 41,980 power-looms, and employing 128,459 hands. In the returns for 1874, Scotland took the first rank as regards the number of flax factories, Ireland the second, and England the third rank. There were in Scotland at that date 159 factories, with 275,119 spindles and 18,529 power-looms, employing 45,816 persons; and in Ireland 149 factories, with 906,946 spindles and 17,827 power-looms, employing 60,316 hands.

The following table gives the number of factories for flax spinning in England, with the number of spindles and power-looms in use, and the number of persons employed, at various annual periods from 1851 to 1874:—

Years.	Number of Flax Factories.	Number of Spindles.	Number of Power Looms.	Number of Persons Employed.
1851	135	265,568	1,083	19,001
1856	138	441,759	1,987	19,787
1861	136	344,308	2,160	20,305
1868	128	437,623	5,086	21,859
1870	155	269,768	3,048	19,816
1874	141	291,735	5,624	22,327

The number of persons employed in the flax-spinning factories of England in 1874 comprised 6856 males and 15,471 females. Of the males, 844 were boys under thirteen, 1380 lads from thirteen to eighteen, and 4632 men over eighteen years of age. Of the females, 1245 were children under thirteen, and 14,226 women over thirteen years of age. There was a slight increase in the proportion of children of both sexes employed in the flax factories of England in the period from 1850 to 1874. In the Scottish flax factories, during the same time, the increase of children, notably females, was very great. There were only 218 girls under thirteen employed in all the flax-spinning factories of Scotland in 1850, and the number had risen to 1956 in 1874.

The following table shows the distribution of flax factories over the various counties of England—there are none in Wales—at the end of 1874:—

Counties.	Number of Flax Factories.	Number of Power Looms.	Number of Persons Employed.
Middlesex, Surrey, and Kent	3	8	164
Sussex, Hants, and Berks	2	36	153
Essex, Suffolk, and Norfolk	5	149	256
Wilts, Dorset, Devon, Cornwall, and Somerset	30	392	2,736
Gloucester, Hereford, Salop, Stafford, Worcester, and Warwick	5	99	960
Leicester, Rutland, Lincoln, and Notts	2	..	217
Lancashire	18	1,133	4,404
Derbyshire	2	95	170
Yorkshire	59	3,507	12,058
Durham, Northumberland, Cumberland, and Westmoreland	14	149	1,174
Cheshire	1	56	35
Total	141	5,624	22,327

The chief seat of the flax manufacture, it will be seen, is in Yorkshire. It is a new branch of industry in Leicestershire and the adjoining midland counties, where it did not exist previous to 1870.

Hemp and Jute.—Among the minor textile manufactures, hemp and jute come next to flax. The hemp manufacture is of comparatively recent date. There were but five hemp factories in the United Kingdom in 1861, but they had increased to 61 in 1874. Of these 45 were in England, 12 in Scotland, and 4 in Ireland. The English hemp factories, situated mainly in Lancashire and the northern counties, had in use 6448 spindles and 22 power-looms in 1874, and gave employment to 3039 persons, of whom 1574, or about one-half, were women. Of jute factories, there were in the United Kingdom 110 in 1874, England having 15, Scotland 84, and Ireland 11. The English jute factories, distributed over the northern and midland counties, had in use 21,754 spindles and 927 power-looms in 1874, and employed 4933 persons, of whom 3423, or nearly three-fourths, were women. In 1861 the whole of the jute factories of England employed only 107 persons.

Hosiery, lace, and shoddy factories.

Hosiery, Lace, and Shoddy.—There are enumerated in parliamentary papers, and various official returns, a number of other existing factories, among them of hosiery, lace, "shoddy," hair, felt, and elastic fabrics. The hosiery factories of the United Kingdom employed 11,980, and the lace factories 10,373 persons in 1874; but all the others gave employment, in the aggregate, to less than 9000 workers. The hosiery factories were all in England, with the exception of 4 in Scotland, employing 1006 persons. In the English hosiery factories, 65 in number, nearly all in Leicestershire and adjoining midland counties, there were 10,914 persons employed in 1874, about one-half of them women. The hosiery factories of England more than doubled from 1861, when their number was 65, to 1874. The same was the case with the lace factories, which increased from 186 to 311 in 1874. Another notable textile industry enumerated in the official returns is that of "shoddy factories." There were of these establishments, 125 in the United Kingdom in 1874, all of them in England, with the exception of some very small Scottish ones, returned as employing together 7 persons. The English shoddy factories, dispersed in 1874 over Yorkshire and Lancashire, with but a few in other counties, had in use in that year 101,134 spindles and 1437 power-looms, and employed 3424 persons, more than one-half of them women. There was an increase in the shoddy factories of Lancashire from 1868 to 1874, but a decrease during the same period in those of Yorkshire.

Factory Supervision.—To protect the health of the people employed in English manufacturing industries, and to preserve them from accidents of all kinds, parliament passed in recent years a number of laws, known generally as the Factory Acts. In these Acts, the hours of labour are restricted, more especially for young persons and women, who cannot be set to work for more than 12 hours on any day, and not for more than 60 hours per week. The due execution of the Factory Acts is superintended by inspectors of factories, appointed by the Government, who have to make to the home secretary half-yearly reports, which are printed and laid before parliament. In a recent report it is stated that the laws passed are constantly more appreciated both by employers of labour and by the workers, but that the latter are subjected to much suffering through stagnation of trade. The latter is ascribed mainly to foreign competition. While there is doubtless truth in this view, there can be equally little doubt that other causes have affected, and continue to affect, English manufacturing industry.

FISHERIES.—The stagnation of trade which made itself felt, in recent years, in the chief manufactures, operated

also upon the fisheries. It appears from official returns that there was a gradual decrease in the number of fishing boats, as will be seen from the subjoined table, which gives the number of boats of which the tonnage was known, for each division of the United Kingdom in the years 1872, 1873, and 1874:—

Divisions.	1872.	1873.	1874.
	Number.	Number.	Number.
England and Wales	14,237	14,171	14,126
Scotland	14,451	13,954	13,471
Ireland	8,450	7,193	6,529
Isle of Man	375	371	377
Channel Islands	783	600	568
Total	38,296	36,289	35,071

The following table shows the tonnage of the preceding number of fishing boats, in each of the years named:—

Divisions.	1872.	1873.	1874.
	Tons.	Tons.	Tons.
England and Wales	140,535	145,134	150,268
Scotland	92,595	92,224	91,119
Ireland	28,651	25,629	25,226
Isle of Man	5,047	5,032	5,185
Channel Islands	2,988	2,725	2,469
Total	269,816	270,744	274,267

It will be seen that there was an increase, during the three years, in the total tonnage of the English, but a decrease in that of the Scottish and Irish fishing boats, as well as in that of the Channel Islands.

The fishing boats of the United Kingdom are divided by the Board of Trade into three classes,—the first class comprising all boats over 15 tons; the second all boats under 15 tons, propelled otherwise than by oars; and the third class all boats navigated only by oars. The number of the first class in England and Wales at the end of 1874 was 2934, with a tonnage of 110,500, and in Scotland 2407, with a tonnage of 40,629. Of fishing boats of the second class there were at the same date 8313, with a tonnage of 35,670, in England, and 9815, with a tonnage of 48,124, in Scotland. Of boats of the third class, there were in England 2879, with a tonnage of 4098, and in Scotland 1249, with a tonnage of 2366. Thus England had the superiority in vessels of the first and third, but not in those of the second class. The fisheries of England are devoted mainly to the netting of mackerel, pilchards, and similar fish, and those of Scotland to cod, ling, and herrings.

The imports of fish from foreign countries have in recent years been on the increase, and the exports on the decrease. The total value of the imports of fish in 1872 was £859,042, and in 1876 it amounted to £1,459,974. The total exports of fish were of the value of £1,183,801 in 1872, and of £624,726 in 1876. The exports are chiefly in herrings, of which 631,750 barrels were shipped to foreign countries in 1872, and 426,588 barrels in 1876. (See also FISHERIES.)

VI.—Commerce.—Shipping.

British commerce received an enormous development, unparalleled in the history of any nation, during the half a century from 1826 to 1876. In the year 1826 the aggregate value of the imports into and exports from the United Kingdom amounted to no more than £88,758,678; while the total rose to £110,559,538 in 1836, and to £205,625,831 in 1846. In 1856 the aggregate of imports and exports had risen to £311,764,507, in 1866 to £534,195,956, and in 1876 to £631,931,305. Thus the commercial transactions of the United Kingdom—those of England, by itself,