COTTON, an important vegetable fibre, extensively cultivated in various parts of the globe within the 35th parallels of latitude.

1. *Botanical and Commercial Classifications.*—C. is the produce of all the species of the genus *Gossypium*, which belongs to the natural order *Malvaceæ*, and is thus allied to Mallow, Hollyhock, Hibiscus, &c., the general resemblance to which is very apparent both in the foliage and flowers. The species are partly shrubs, partly herbaceous, and either perennial or annual; they are natives of the tropical parts of Asia, Africa, and America, but their cultivation has extended far into the temperate zones. They all have leaves with three to five lobes, which in a very young state are often sprinkled with black points, and rather large flowers, which are mostly yellow, but sometimes in whole or in part purple; the flowers very soon fall off; they grow singly from the axils of the leaves, and are surrounded at the base by three large, heart-shaped, cut or toothed, involucral leaves or bracts, partially growing together as one. The fruit is a 3—5-celled capsule, springing open when ripe by 3—5 valves, and containing numerous seeds enveloped in C., which is generally white, but sometimes yellow, and

Cotton (*Gossypium tricuspidatum*).

issues elastically from the capsule after it has burst open. The figure represents a species of C. plant found in India, and shews the manner in which the C. escapes from the capsule. Some of the other kinds have the flowers larger in proportion, and the leaves divided into more numerous and much deeper and narrower lobes, but the general appearance of all is very similar. Difference of opinion exists among botanists as to the number of distinct species, and there are very many varieties in cultivation, the number of which, through climatic influences and other causes, is continually increasing; but there are certain leading peculiarities on account of which some botanists and practical farmers reduce all, at least of the cultivated kinds, to four primary species—viz., 1. *Gossypium Barbadense;* 2. *G. Herbaceum* or *Indicum;* 3. *G. Peruvianum;* and 4. *G. Arboreum.* The produce of the first species is the most valuable. The beautiful long-stapled silky wool known as 'Sea Island' is a variety, and is grown exclusively upon the islands and a

portion of the mainland of Georgia, South Carolina, and Florida; the saline ingredients of the soil and atmosphere being indispensable elements of the growth. The plant bears a yellow flower, and the seeds are small, black, and quite smooth, and the wool is easily separated therefrom; but when sown far inland, away from the saline influences of the coast, the seeds increase in size, and become covered with innumerable short hairs. A large percentage of the crops raised in Alabama, Louisiana, Mississippi, Texas, &c., are also varieties of this species, though, owing to climatic influences, the wool is shorter in staple, and less easily separated from the seeds than Sea Island. The commercial value of the latter kind varies from 1*s.* to 3*s.* per lb., rare specimens sometimes realising 5*s.* or 6*s.* per lb. The better descriptions of Egyptian cotton belong to *G. Barbadense*, and bring 1*s.* to 2*s.* 6*d.* per lb. in the Liverpool market. The short-staple varieties, known as New Orleans, Mobile, &c., sell at from 5*d.* to 10*d.*, extra qualities sometimes bringing 1*s.* per pound. *G. herbaceum* is found in India, China, Egypt, &c. The principal commercial varieties are those known as Surat, Madras, and short-stapled Egyptian. It is a small shrubby plant, bears a yellow flower, the seeds are covered with short grayish down, and the staple produced, though not long, is very fine. Its price varies from 3½*d.* to 9*d.* per lb. A variety is cultivated in the United States, and the C. known as nankeen is thought to belong to this species. *G. herbaceum* can be profitably cultivated in colder countries than any other species of C. plant. The third species is a native of South America, and the 'green seed' C. of the United States appears to be a variety. The stem reaches 10 to 15 feet in height, the flowers are yellow, and the capsules contain eight or ten black seeds firmly attached together in a cone-like mass. The wool is long and strong-stapled, and in value stands next in order to Sea Island and long-stapled Egyptian. Maranham, Bahia, and Maceio are varieties which sell in Liverpool at from 8*d.* to 1*s.* 2*d.* per lb. *G. arboreum* is found in India, China, &c., and, as its name imports, is a large tree-like plant. It bears a red flower, and produces a fine yellowish-white wool. Varieties of it have been long cultivated in the United States, and with the requisite soil and climate, are said to produce a wool somewhat resembling Sea Island.

2. *Cultivation.*—The plant is a very delicate organism, and requires a peculiar soil and climate for its due development. The method of cultivation is much the same in the various countries where the fibre is grown; but the most perfect system is that which obtains in the United States of America. Although the plant is not, strictly speaking, an annual, it is found more profitable to destroy the shrub, after the crop is gathered, and sow new seed every year. The preparation of the land takes place during the winter-months. After the ground has been thoroughly ploughed, and as soon as all symptoms of frost have disappeared, the soil is laid off into rows varying in width from 3 to 4 feet, according to the situation and quality of the soil. The seed is then sown along the centre of the beds in a straight furrow made with a small plough or opener; but in some plantations the seed is sown in holes from 12 to 18 inches apart. The sowing commences in March, and generally continues through April; but sometimes, owing to late spring frosts, the planting is prolonged to May. The young shoot appears above ground in about eight to ten days, and is then and subsequently weeded and thinned. Blooming takes place about the beginning of June—in early seasons, towards the latter end of May; the average date is about June 5. As a general rule, C. is a dry-weather plant. For ploughing, the planter requires just sufficient rain to give the soil a moist and spongy texture. During the early stages of its growth, the crop flourishes best with a warm steamy sort of weather, with an occasional shower until blooming; too much rain being productive of weeds and wood at the expense of wool, whilst a severe drought produces a stunted plant, forced into too early maturity, and resulting in a small and light-stapled crop. A great deal, however, depends upon the position of the plantation; lands situated in hilly or upland districts obviously requiring more moisture than those lying in the plains and river-bottoms. From the date of blooming to the close of the picking season, warm dry weather is essential. Picking generally commences in August, occasionally in July, and continues until the occurrence of frost—about the end of October or beginning of November—puts a stop to the further growth of the plant. All the available hands of the plantation, young and old, are called into full employment during the harvest. The C. is gathered into baskets or bags suspended from the shoulders of the pickers, and when the crop has been secured, it is spread out and dried, and then separated from the seeds. The latter process was formerly performed by hand—a tedious operation, by which one hand could clean only a pound or so a day; but since the invention of the saw-gin, by Eli Whitney in 1793, the process of cleaning has been both rapid and effectual. This machine is composed of a hopper, having one side formed of strong parallel wires placed so close together as to exclude the passage of the seeds from within. The wool is dragged through the apertures by means of circular-saws attached to a large roller, and made to revolve between the wires, the seeds sinking to the bottom of the hopper. This process is adopted only in cleaning the short-stapled varieties of American C., the seeds of which adhere so firmly to the wool as to require a considerable amount of force to separate them. The Sea Island variety is cleaned by being passed through two small rollers, which revolve in opposite directions, and easily throw off the hard smooth seeds. In India, though the saw and other machine-gins have been introduced in some districts, the wool is mostly cleaned by means of the primitive roller. Both descriptions of gins are used in Egypt and Brazil. The C. cleaned by the roller-gin, being uninjured thereby in staple, realises the better price; but the deterioration caused by the saw-gin is compensated for by the greatly increased quantity cleaned; the latter turning out four or five times as much work as the former in an equal space of time, and thereby considerably reducing the expense of cleaning. The introduction of improved gins has very largely increased the production of cotton in Egypt and Brazil during the past fourteen years.

3. *Production and Distribution.*—The oldest C.-producing country is India, in which empire the plant has been grown and manufactured from time immemorial. Early mention is also made of it in the annals of Egypt, and it is believed to have a high antiquity in all parts of Africa. In the western world, it was found by Columbus, but was not so extensively cultivated as in the East; though during the past half-century the culture there has outstripped, both in quantity and quality, the produce of the Old World. Down to the commencement of the present century, the C. consumers of Europe were dependent upon the East and West Indies and the Levant for their raw material; but the inventive genius, superior farming, and greater energy of the planters of the Southern States of America, had, prior to the civil war, almost secured

the monopoly of supplying the manufactures of Great Britain and the European continent with this valuable fibre. The average import of American cotton into Great Britain in 1858—1860 reached 79 per cent. of the entire arrivals; during the war the proportion fell to 3½ per cent.; but in 1871, it rose to 58 per cent. We will glance briefly at the history of the trade of the chief C.-growing countries.

United States.—The introduction of the plant is traced as far back as 1536, but the export trade did not commence until two and a half centuries later, the first shipment of importance being about 2000 lbs. in 1770. In 1791, the amount reached 189,316 lbs. In 1793, the invention of the saw-gin gave a new stimulus to the trade, and in 1800, the exports reached 17,789,803 lbs.; from which period the shipments have continued to increase, being over 124,000,000 lbs. in 1821, 277,000,000 lbs. in 1831, 530,000,000 lbs. in 1841, 927,000,000 lbs. in 1851, and about 2,160,000,000 lbs. in 1860. Simultaneously with this rapid increase in production, there was, down to 1851, a gradual decline in the price of the wool, in consequence of improved processes of cultivation and cleaning, and the cheapening of carriage, &c.; the average price in Liverpool, in 1793, being 1*s.* 6*d.* per lb.; in 1801, 2*s.* 2*d.*; in 1811, 1*s.* 2*d.*; in 1821, 9½*d.*; in 1831, 6*d.*; in 1841, 6¼*d.*; in 1851, 5¾*d.* per lb.; from which period, however, the downward course was not only checked, but a movement in the opposite direction commenced, the average for 1856—1861 being 7*d.* per lb; the low prices current having caused consumption to overtake production. The outbreak of the civil war in 1861, and its continuance until 1865, completely revolutionised the industry of the South. The abolition of slavery added materially to the cost of producing cotton; and this circumstance, along with the general rise which has taken place in values of all kinds during the past twelve or fifteen years, has raised the price at which it will pay to sell American cotton in Liverpool to nearly 8*d.* per lb., against an average of 7*d.* per lb. for the five years ended with 1861. During the war, middling Orleans touched 2*s.* 7½*d.* per lb. In 1867 (December), there was a decline to 7⅜*d.*—every one expecting a return of old prices; within a few months, there was a reaction to 1*s.* 1*d.* Since then the tendency has been downwards: the average for 1875 being 7⅝*d.*, against 8*d.* in 1874, and 9*d.* in 1873.

The following table is interesting as shewing the wide fluctuations which have taken place in the exports of cotton from the United States during the 12 years ending in 1871, expressed in millions of lbs.

	Weight, lbs.	Average Price, cents.		Weight, lbs.	Average Price, cents.
1859—60,	1767·6	10·85	1865—66,	650·6	43·24
1860—61,	307·5	11·07	1866—67,	661·5	30·1
1861—62,	5·0	23·30	1867—68,	784·3	19·2
1862—63,	11·4	58·43	1868—69,	644·3	24·9
1863—64,	10·8	83·43	1869—70,	900·4	23·4
1864—65,	6·6	86·58	1870—71,	1462·9	14·8

In 1871—1872 there was a reduction to 933,000,000 lbs., owing to a failure of the crop. In 1874—1875 the weight exported was about 1,178,700,000 lbs., or still considerably less than in the great crop season 1870—1871.

STATEMENT OF THE PRODUCTION, DISTRIBUTION, AND AVERAGE PRICE OF THE LAST FIFTY CROPS OF AMERICAN COTTON, ACTUAL AND PROPORTIONAL, IN AVERAGE PERIODS OF FIVE YEARS EACH (EXPRESSED IN THOUSANDS OF BALES).

Periods of Five Years.	Average Produce of: Georgia via Savannah.	S. Carolina via Charleston.	N. Carolina and Virginia.	Florida via Apalachicola, &c.	Alabama via Mobile.	Louisiana, Miss. Ark., Tennessee, and Texas.	Average Total Crop.	Proportional Produce of: Georgia.	S. Carolina.	N. Carolina and Virginia.	Florida.	Alabama.	Louisiana, &c.	Average Exports to: Great Britain.	France.	Other Foreign Ports.	Total.	Average Consumption of U. S. (*N. of Virginia only*).	Average Stock at close of Season.	Total Average Deliveries.	Proportional Distribution of Total Average Deliveries: Great Britain.	France.	Other Foreign Ports.	Consumption of United States.	Average Price p. lb. of Whole Crop: Five Years.	Last Year.
																									c.	c.
1826—30	216	152	91	4	84	302	849	25¼	17¾	10⅔	⅓	9⅞	35¼	539	173	46	758	114	35	872	61⅞	19⅞	5⅓	13	10¼	9⅛
1831—35	252	194	69	29	143	424	1111	22⅝	17⅓	6⅓	2⅝	12⅞	38⅝	673	202	41	916	193	56	1109	60⅔	18¼	3¾	17⅔	11⅝	16⅜
1836—40	267	249	44	96	295	673	1624	16⅜	15⅓	2⅝	5¾	18½	41⅜	966	308	88	1362	255	54	1617	59⅓	19	5½	15½	12	8½
1841—45	246	314	28	141	421	874	2024	12⅛	15½	1⅜	7	20⅞	43⅛	1181	347	172	1700	325	91	2025	58⅜	17⅛	8⅛	16	7⅞	5½
1846—50	285	341	21	161	410	993	2211	12⅞	15⅜	1	7½	18½	44⅝	1180	308	229	1717	477	163	2194	53⅜	14	10⅝	21¾	8½	11
1851—55	338	449	42	168	508	1377	2882	11⅞	15⅝	1⅜	5⅞	17⅝	47⅜	1595	387	323	2305	576	126	2881	55⅜	13½	11⅛	20	9⅜	8¾
1856—60	400	458	63	154	646	1900	3621	12	11	1¾	4½	17⅞	52½	1970	464	485	2919	678	119	3597	54⅝	12⅞	13½	18¾	11¼	10⅞
1866—70	371	192	188	56	314	1299	2420	15⅓	8	7¾	2½	13	53⅝	1234	237	206	1677	798	95	2475	49⅞	9	8¼	32¼	28	23⅜
1871—75	604	375	469	14	329	1939	3730	16⅛	10	12⅝	⅜	8⅞	52	1898	261	507	2666	1062	85	3727	50⅞	7	13⅝	28½	—	—

The figures between 1861—1865 were disturbed by the war. Down to within a few years before the war, the bulk of the crops grown in the various states were shipped at the several ports of each state—Alabama C. at Mobile, Georgia C. at Savannah, and so on; but the more general introduction of railways has diverted a great deal of C. from the old channels. The increase under the head 'N. Carolina and Virginia' is owing almost entirely to this cause. One of the most remarkable features in the last line of the above table is the large proportionate increase in the consumption of the United States. The particulars for three seasons, from 1872 to 1875, compare as follow:

	1872—73.	1873—74.	1874—75.
Receipts at the ports,	3,792,000	4,042,000	3,702,000
Direct from plantations,	138,000	128,000	130,000
Total crop, . .	3,930,000	4,170,000	3,832,000

	1872—73.	1873—74.	1874—75.
Exported to Gt. Britain,	1,906,000	1,868,000	1,894,000
" France, .	253,000	371,000	360,000
" other Ports,	521,000	602,000	431,000
Consumed, North, .	1,063,000	1,184,000	1,060,000
" South, .	138,000	129,000	130,000
Total deliveries, .	3,881,000	4,154,000	3,875,000
Stock, close of Season,	91,000	108,000	66,000

East Indies.—After the United States, the most extensive C.-producing country is India. The plant is indigenous to the soil, and the culture and manufacture have existed from prehistoric times. A century ago, the western world was almost entirely dependent upon the east for its C. goods, but within the past one hundred years the order of things has been almost reversed. The mills of Lancashire are now in successful competition with the famed looms of India, and the natives

of that vast empire find it cheaper to take our calicoes in exchange for their raw C., than it is to manufacture their own clothing. The first import of East Indian C. into Great Britain took place in 1783. The average receipts, from that year to 1792, were 65,550 lbs.; from 1793 to 1800, 2,223,039 lbs.; 1801 to 1810, 6,357,000 lbs.; 1811 to 1820, 24,016,805 lbs.; 1821 to 1830, 18,835,567 lbs.; 1841 1850, 79,815,403 lbs.; and 1851 to 1859, 23,017,310 lbs. In 1820, only 224 pounds-weight of C.-yarn, and 14,191,177 yards of goods, were exported to India; but in 1874, the figures, including shipments *viâ* Suez, were 38,000,000 lbs. yarn, and 1,263,000,000 yards of calico! It is impossible to ascertain the total amount of C. raised in India; but we may observe that the fibre is grown all over the peninsula, and is used for all the purposes for which we employ C., flax, wool, and mostly hemp. The following figures will give the reader some idea of the extent of the export branch of the trade; they also shew the marvellous expansion incidental to the American war.

WEIGHT AND VALUE OF COTTON EXPORTED FROM INDIA.

	lbs.	£		lbs.	£
1857,	319,653,524	4,437,949	1866,	803,150,424	35,587,389
1860,	345,953,569	5,637,624	1869,	691,196,905	19,778,924
1863,	473,678,421	18,779,040	1872,	809,246,087	21,272,430

Prior to the American war, the supply of C. from India was merely supplementary to that from the United States. With a small crop in America, prices advanced, and the imports from India increased; but with a large American yield, prices drooped, and the receipts from India fell off; the surplus produce finding its way to China, or being consumed in the interior. This is in a measure still the case (as is shewn in the above figures), though not to the same extent as formerly. By the introduction of improved methods of cultivation, cleaning, &c., the quality of Indian C. has been greatly improved; and it is now much more generally used than it was twelve or fifteen years ago.

Brazil.—The C. trade of Brazil has undergone a most extraordinary development during the past ten years, owing to the impetus given to the cultivation of the plant during the American war, and to the general adoption of the saw-gin in place of the roller-gin; this substitution of the American gin has produced quantity at the expense of quality; but the demands of fine spinners have been met by increased supplies from Egypt. The subjoined statement shews the progress made by this branch of Brazilian trade:

IMPORT OF BRAZIL COTTON INTO EUROPE.

	Bales.		Bales.
1831—1835, average	175,000	1861—1865, average	201,000
1841—1845, " .	105,000	1866—1870, " .	614,000
1851—1855, " .	149,000	1871—1874, "	723,000

Egypt.—The C. plant has been known in Egypt from time immemorial; but the trade, properly so called, was first introduced by the celebrated Mehemet Ali, about fifty years ago. The first exportation took place in 1821, and amounted to 944 cantars. During the seven years ending 1827, 1,011,697 cantars were produced, or 144,528 cantars per annum. In the next septennial period, there was a falling off, owing to the withdrawal of a large number of labourers to carry on the wars of the pasha in Soudan, &c., and Syria; the exports therefore only reached 900,521 cantars, or 128,646 per year. The transactions of the subsequent seven years shew a considerable improvement, the total shipments being 1,498,042 cantars, and the annual average 214,006 cantars. During the years 1842—1848, the total rose to 1,549,909 cantars, being an annual average of 221,415 cantars. Since then, the trade has continued to augment. The average shipments of the years 1849—1859 were 473,282 cantars. The cantar is equal to 94 lbs., and there are about 5½ cantars to the bale of the present (1873) average size; so that the exports in 1849—1859 represented 86,000 bales per annum. In 1865, the shipments reached 406,000 bales; in 1875 they amounted to 347,000 bales—or 2,020,000 and 1,908,000 cantars respectively. Great Britain is the principal consumer of Egyptian C., after which comes Austria, then France. The following figures shew the destination of the C. exported from Alexandria during the six years ending September 30, 1875.

EXPORTS TO

	England.	France and Spain.	Austria and Italy.	Total.
1870, .	177,631	26,356	26,735	230,722
1871, .	246,513	14,974	52,391	313,878
1872, .	274,921	22,577	43,967	341,465
1873, .	299,082	35,251	50,580	384,913
1874, .	312,172	54,540	43,545	410,257
1875, .	273,019	34,644	39,651	347,314

Other Countries.—In addition to the districts just passed in review, C. is grown in numerous other countries. During the infancy of the trade our spinners received 75 per cent. of the C. consumed from the West Indies, and the remainder from the Levant; with the great expansion of the culture in America, the supplies from the West Indies gradually fell off, the planters finding it more profitable to occupy their labour and capital in the production of sugar and other growths. Early in the present century, the imports into Great Britain from the West Indies averaged 80,000 bales per annum; but by 1858 the arrivals had dwindled to only 6500 bales, of which only about 2200 bales were from the West Indies, properly so called. Under the stimulus of the high prices which ruled during the C. famine, the supplies from miscellaneous sources—that is, from all countries except the United States, East Indies, Brazil, and Egypt—rose from 6500 bales in 1858, and 9800 in 1860, to 23,000 in 1863, and 131,000 in 1865. With the decline in prices, the import fell to 100,000 in 1868. There was an increase to 166,000 in 1872, owing to the high prices ruling in that year, but the increase was chiefly from Peru. Since that year, with a falling market, the import from 'other countries' has annually diminished, being only 89,000 bales in 1875, against 166,000 in 1872, the decrease, like the previous increase, being principally in Peruvian. Twenty years ago, Peruvian cotton was almost unknown in the Liverpool market; in 1864, the imports reached 27,000 bales; in 1872, they amounted to nearly 105,000 bales; but in 1875 they fell to 56,000 bales.

4. *Consumption.*—Our remarks under this head will be confined to Europe and the United States of America. An immense quantity of C. is consumed annually in India, China, and Africa, but there are no means of ascertaining even an approximation of the amounts so used. There are 11 spinning and weaving mills in Bombay, containing 404,000 spindles, and 4294 looms; and there are 8 mills in other towns of the presidency. 'These,' says an official Report (1873), 'are quite independent of the old native manufactories, and were started entirely in consequence of the inferiority of the piece-goods imported from Manchester.' This inferiority was occasioned by the excessive and deleterious method of sizing adopted during the C. famine, in order to meet the demand for low-priced goods, and is a matter which has lately occupied the serious attention of the Manchester

Chamber of Commerce. Besides the mills in the Bombay presidency, factories have also been erected in the Bengal and Madras presidencies; and in the North-west and Central Provinces; a considerable native manufacture is also carried on in Burmah.

Great Britain.—The origin of the C. trade of the continent dates as far back as the 10th c., at about which period the staple was introduced into Spain by the Mohammedans. Since that time, the manufacture has continued to expand, more or less, until it has arrived at its present gigantic proportions. Though we have early mention of C. goods in the annals of almost every country of Europe, still the progress of the trade was very slow until within the past one hundred years. Indeed, before the middle of the 18th c., C. goods, properly so called, were never produced—the fabrics manufactured being a mixture of either C. and linen, or C. and wool, C. yarn being used for weft only. It is from the dates of the patents of Wyatt (spinning by rollers, 1738), Arkwright (water-frame, 1769), Hargreaves (jenny, 1770), Crompton (mule, 1779), and Cartwright (loom, 1785), that the rise of our modern manufacture must be dated. The stimulus given to the trade of our own country by these inventions was instantaneous, and when adopted on the continent, a few years after their utility had been sufficiently proved, similar effects followed there. The following figures will give the reader an idea of the rapid extension of the consumption of C. in Great Britain:

IMPORT OF COTTON WOOL INTO GREAT BRITAIN.

Year.	American. lbs.	Total of all kinds. lbs.
1701,	none	1,976,359
1751,	none	2,976,610
1771, one year after Arkwright's loom and Hargreaves' jenny,	none	4,764,589
1780, year after Crompton's mule,	none	6,766,613
1785,	none	18,400,384
1791,	189,316	31,447,605
1794, year after the invention of the saw-gin,	487,600	19,040,929
1800,		43,379,278
1820,	89,999,174	151,672,655
1840,	487,856,504	592,488,010
1860,	1,115,890,608	1,390,938,752
1871,	1,038,677,920	1,778,139,776
1875,	816,223,920	1,458,598,470

The following table furnishes particulars of the imports, exports, and home consumption of C. during the past seventy-five years, in average periods of ten years down to 1870, and for the five years 1871—1875.

SUPPLY AND CONSUMPTION OF RAW COTTON IN GREAT BRITAIN, IN THOUSANDS OF BALES, FROM 1801 TO 1875.

Average Periods of Ten Years.	Import. United States.	Brazil.	Egypt.	West Indies, &c.	East Indies.	Total.	Export.	Home Consumption.	Total Deliveries.
1801—10,	127	72	..	81	19	299	8	291	299
1811—20,	159	130	..	54	70	413	31	346	377
1821—30,	436	144	36	26	54	696	65	630	695
1831—40,	818	128	31	22	131	1130	97	1014	1111
1841—50,	1190	113	52	13	209	1577	176	1403	1579
1851—60,	1778	125	106	9	432	2450	362	2070	2432
1861—70,	907	332	227	80	1405	2951	804	2151	2955
1871—75,	1873	525	397	129	1138	3962	727	3183	3910

The bales vary considerably in weight. In 1875 the averages were as follow: American, 439 lbs.; Brazilian, 160 lbs.; Egyptian, 602 lbs.; Smyrna, 370 lbs.; West Indian, &c., 205 lbs.; Surat, 390 lbs.; Madras, 300 lbs.; and Bengal, 300 lbs. During the C. famine, a considerable quantity of C. was received from China in bales averaging 266 lbs. The comparative statement in the following table shews the relative importance of the various sources of supply—actual and proportional—in 1802, and on the average in 1828—1830, 1858—1860, and 1874—1875. The quantities are given in millions of pounds—32·1 equal 32,100,000 lbs.

The factory returns for 1875 state that there were in Great Britain, in that year, 41,300,000 spindles (including 3,800,000 doubling spindles), and 463,000 looms, and that 479,500 persons were employed in the manufacture. The various buildings and machines are said to have cost £66,000,000, and it has been calculated that a floating capital of £30,000,000 is employed in carrying on the trade. If we take into consideration the persons employed in the building of the mills and making of the machines, and in the buying and selling of the raw and manufactured material, it will be found that something like 4,500,000 individuals are dependent upon the prosperity of the cotton trade for their livelihood. The total quantity of yarn exported in 1875 was 215,000,000 lbs., worth £13,200,000; and the total quantity of calicoes, cambrics, fustians, &c., was 3,480,000,000 yards, worth £52,700,000. Besides these, there were £5,000,000 worth of lace, smallwares, &c.; which raises the total value to £70,900,000.

	Weight in lbs.				Proportion.			
	1802	1828—1830	1858—1860	1874—1875	1802	1828—1830	1858—1860	1874—1875
America,	32·1	173·3	970·3	837·9	53·2	72·7	79·7	56·3
Brazil,	10·5	30·4	19·4	73·2	17·4	12·8	1·6	4·9
Egypt, &c.,		5·5	40·1	170·2		2·3	3·3	11·4
West Indies, &c.,	15·0	5·8	10·8	21·2	25·0	2·4	0·9	1·4
East Indies and China,	2·7	23·2	176·4	386·6	4·4	9·8	14·5	26·0
Total,	60·3	238·2	1217·0	1489·1	100·0	100·0	100·0	100·0

France and Alsace.—The first import of C. into France took place in 1668—viz., 450,000 lbs. *vid* Marseilles from the Levant. In 1750, the receipts reached 6,978,588 lbs.; but during the wars of the Revolution and the first Empire, little progress was made. In 1815, the import was 36,200,000 lbs.; in 1825, it rose to 55,150,000 lbs.; in 1836, to 118,000,000 lbs.; in 1846, to 159,000,000 lbs.; in 1856, to 211,000,000 lbs.; in 1860, to 270,000,000 lbs. In 1862, the arrivals fell to 127 millions, owing to the stoppage of supplies from America. In 1869, the consumption was estimated at 242 millions; but the war cut down the figures to 165 millions in 1870, and 185 millions in 1871. In 1874, there was a rise to 208 millions. These latter figures are exclusive of Alsace and Lorraine, which use about 65 million lbs.; making 273 millions for France, as she stood before

the war, against 242 millions in 1869. The number of cotton spindles in France is about 5,200,000. In Alsace there are about 1,700,000.

Belgium.—The average import of C. into Belgium in 1836—1840, was about 39,500 bales; in 1846—1850, 56,600 bales; in 1856—1860, 61,000 bales; in 1870, 91,000 bales; and in 1874, 127,000 bales. In the last-named year, 91,000 bales were consumed; part of the remainder was forwarded to Germany, Switzerland, or Alsace, and part was added to stock. The number of spindles in Belgium is variously estimated at from 650,000 to 800,000.

Switzerland.—The trade of this confederation has flourished considerably. In 1833, its consumption was about 6,000,000 lbs.; in 1843, about 22,000,000 lbs.; in 1859, about 28,000,000 lbs.; in 1874, about 52,500,000 lbs. The first spinning-machine was set up at Zurich in 1807. In 1826, the number of spindles was 300,000; in 1830, 400,000; in 1835, 650,000; in 1840, 750,000; in 1845, 850,000; in 1850, 950,000; in 1860, 1,350,000; and at the present time, about 2,100,000. Prior to the Franco-Prussian war, the Swiss spinners received the bulk of their raw material *viâ* France, but now they are supplied mainly through Holland and Germany. The manufactured products of Switzerland are well liked, and compete successfully with those of England in the various continental markets.

Holland.—The C. trade of Holland is chiefly a transit one. The imports in 1872 reached 268,000 bales; in 1873, 180,000 bales; and in 1874, 168,000 bales. The deliveries were 224,000 in 1872, 180,000 in 1873, and 183,000 in 1874; but only about 28,000 bales per annum were retained for consumption, the remainder passing to Germany, &c. The number of spindles in Holland is about 230,000.

German Empire.—Under this head are included the various political divisions of Germany. The several states have made considerable progress in the production of C. fabrics. The C. is received chiefly through the ports of Hamburg and Bremen, but a considerable quantity is also received *viâ* Holland and Belgium, while a further portion is received into South Germany from Trieste. The average imports into Hamburg, Bremen, Amsterdam, and Rotterdam, in the five years ended with 1840, reached 109,000 bales; in the five years ended with 1855, they averaged 233,000 bales; in the three years ended with 1874, they averaged 655,000 bales. The deliveries in the last-named period, however, did not exceed 644,000 bales—the balance being retained in stock. The number of spindles in Germany in 1846 was about 815,000; in 1858, 2,000,000; and in 1874, 3,500,000, besides 1,700,000 in Alsace; making a total of 5,200,000. The Germans consume nearly the whole of their own produce, and are besides large buyers of English yarns and goods. The leading seat of the manufacture after Alsace is Saxony; then follow Bavaria, Prussia, Baden, Würtemberg, &c.

Austria.—In the C. trade, Austria has made the least progress of any country on the continent. In 1854, there were in all Austria, including Lombardy and Venice, about 1,533,000 spindles; while in 1872 (including the Italian provinces for the purpose of comparison) there were only 1,900,000—an increase of only 24 per cent. in 18 years. The manufacturers receive nearly the whole of their raw material *viâ* Trieste. The deliveries from that port averaged about 82,000 bales in the five years ended with 1840; 107,000 in 1851—1855; and 125,000 in the three years ended with 1874. The C. trade of Trieste has increased considerably since the opening of the Suez Canal, by which means the spinners of Austria and South Germany have been brought into direct communication with India. Formerly a large quantity of C. was annually exported from Liverpool to Trieste, but the success of M. Lesseps' enterprise has entirely destroyed this branch of trade.

Italy.—The statistical materials relating to this part of the continent are very scanty. The imports into Genoa and Naples in 1851 amounted to about 31,000 bales; in 1860, they reached 94,000, but a good portion of this was forwarded to Switzerland and other places. In 1870, the import was only 47,000 bales; in 1871, the figures reached 92,000; in 1874, fell to 64,000. There are considerable imports also into Venice and Naples. The number of spindles in Italy is estimated to amount to about 700,000, capable of using 88,000 bales per annum.

Spain.—The C. trade of Spain is the oldest in Europe, but until recently has made the slowest progress of any. During the past twenty-five years, however, things have greatly improved. In 1850, the annual consumption was only about 80,000 bales; in 1860, it reached 106,000; in 1870, 152,000; and in 1874, 189,000. There are in Spain about 1,500,000 spindles, capable of using about 189,000 bales of 370 lbs. each.

Russia.—The C. manufacture of this empire is of comparatively recent origin. The imports of raw C. in 1824—1826 (average of three years) were only 2,700,000 lbs.; in 1833—1835, they reached 6,200,000 lbs.; in 1845—1847, 28,000,000 lbs.; in 1853 — 1855, 55,000,000 lbs.; in 1858 — 1860, 94,000,000 lbs.; and in 1869—1870, 100,000,000 lbs., besides a considerable quantity from Bokhara, say from 15,000,000 to 20,000,000 lbs. This immense increase in the consumption of raw C. has considerably curtailed the demand for English yarn. In 1838, we exported 19,311,877 lbs. yarn to Russia, but in 1865, only 1,700,000 lbs.; and in 1872, about 3,000,000 lbs. The number of spindles in Russia is estimated at 2,100,000, capable of using 136,000,000 lbs. of cotton. Except in times of depressed trade, the mills work night and day, each mill having two sets of hands.

Sweden, &c.—There are in Sweden and Norway about 300,000 spindles. The coarser sorts of yarn are produced, and the annual consumption of C. is about 18,000,000 lbs., or 48,650 bales of 370 lbs. each. The C. is imported partly from Liverpool, and partly direct from the United States.

United States.—The first C.-mill built in the United States was in 1791; the second, in 1795; the third, in 1803; the fourth, in 1804; followed by eleven more during the next three years. In 1810, there were 31,000 spindles; in 1831, 1,246,503 spindles; in 1850, 3,633,693; in 1860, 5,035,798; in 1868, 6,600,000; and in 1874, 9,415,000. In 1831, the consumption of C. amounted to 182,000 bales; in 1850, 613,000; in 1860, 843,000; in 1868, 968,000; in 1871, 1,173,000; and in 1874, 1,313,000. In 1851—1852 (average of two years), the consumption represented 21 per cent. of the C. grown, but in 1871—1875, 28½ per cent.! Europe has therefore had to look to other countries to supply her increased requirements, as we have already shewn in a previous portion of this article.

Down to 1845, supply kept constantly ahead of demand, and, at the close of that year, the stock of C. in Europe reached 1,219,000 bales, or about 27 weeks' consumption, the average rate at that time being about 45,000 bales per week. The result was a very serious fall in prices—middling Orleans descending to 3¾*d.* per pound. The produce of America had almost driven the growth of every other country out of the market, and in 1846, the imports from the United States represented 86 per cent. of the total arrivals! The great decline in values naturally led to a serious reduction in the

rate of production, which reduction was further aggravated by unfavourable seasons in the South, and in 1846 the imports from the United States fell to 401 million pounds, and in 1847 to 364 millions, against 626 millions in 1845. Then followed a sharp reaction in prices, and ultimately an important recovery in the amount of supply. Between 1845 and 1856, however, consumption encroached upon production to such an extent, that the stock in Europe at the close of 1856 was only 439,000 bales, or about six weeks' consumption; against 1,219,000 bales, or 27 weeks' requirements, at the end of 1845. In the autumn of 1857, therefore, middling Orleans touched 9⅜*d.* per pound. Thence to 1860, there was a gradual recovery in stocks, and a corresponding decline in prices; but even at the end of 1860, the stock was only 782,000 bales, or about 9½ weeks' consumption, and though middling Orleans had, in the interval, declined to slightly below 6*d.*, the average price for the five years ended with 1861 was 7*d.* per pound. Then followed the American War, of the effects of which we have already written.

The following table furnishes particulars of the consumption of C. in Europe and the United States in average periods from 1826 down to 1874. (The total import of C. into the United Kingdom amounted, in 1877, to 12,100,725 cwts.)

STATEMENT OF THE CONSUMPTION OF COTTON IN EUROPE AND THE UNITED STATES FROM 1826 TO 1874 (IN THOUSANDS OF BALES AND MILLIONS OF POUNDS).

In Thousands of Bales.

	1826—1830.	1831—1835.	1836—1840.	1841—1845.	1846—1850.	1851—1855.	1856—1860.	1861—1865.	1866—1870.	1871—1874.
Consumption—										
Great Britain,	711	903	1156	1368	1458	1895	2265	1669	2639	3209
France,	263	278	372	415	355	442	527	440	613	} 2265
Rest of Europe,	148	182	257	314	421	698	963	756	1229	
United States,	114	193	255	375	566	659	810	410	870	1197
Total,	1236	1556	2040	2472	2800	3694	4565	3275	5351	6671
Sources of Supply—										
America,	821	1122	1528	1990	2277	2949	3675	1203	2523	3813
Brazil,	169	175	142	105	131	149	153	201	614	723
West Indies, &c.,	53	39	73	57	30	30	35	73	175	214
East Indies, &c.,	77	97	159	198	233	352	540	1330	1601	1444
Egypt, &c.,	116	123	138	122	129	214	162	418	438	477
Total,	1236	1556	2040	2472	2800	3694	4565	3275	5351	6671

In Millions of Pounds.

	1826—1830.	1831—1835.	1836—1840.	1841—1845.	1846—1850.	1851—1855.	1856—1860	1861—1865.	1866—1870.	1871—1874.
Consumption—										
Great Britain,	212·3	295·2	405·7	521·3	569·8	750·1	947·3	628·6	973·8	1228·2
France,	77·8	89·6	127·3	157·3	142·4	178·1	225·5	175·1	222·2	} 834·5
Rest of Europe,	42·0	53·1	81·1	109·9	158·0	273·3	401·9	280·3	431·2	
United States,	38·5	68·7	96·9	152·5	240·5	281·4	358·8	181·2	381·9	525·2
Total,	370·6	506·6	711·0	941·0	1110·7	1482·9	1933·5	1265·2	2009·1	2587·9
Sources of Supply—										
America,	276·7	405·9	585·7	816·3	964·2	1254·7	1633·7	531.7	1108·6	1669·9
Brazil,	29.5	30·6	25·3	18·9	23·8	27·1	27·7	36·2	99·9	113·9
West Indies, &c.,	13·2	9·5	13·4	9·4	6·3	6·3	7·2	14·6	33·2	45·2
East Indies, &c.,	25·0	34·2	56·5	72·6	86·7	134·8	207·9	491·3	576·5	522·0
Egypt, &c.,	26·2	26·4	30·1	23·8	29·7	60·0	57·0	191·4	190·9	236·9
Total,	370·6	506·6	711·0	941·0	1110·7	1482·9	1933·5	1265·2	2009·1	2587·9

In the healing art, C. and the cloth and wadding made from it are used for wrapping up and keeping warm, and of late much more than formerly for binding up burns and wounds. A prejudice formerly prevailed against the use of C., as irritating to wounds; but experience has shewn this opinion to be unfounded, and C. is now used in many hospitals quite as freely as linen.

Cotton Manufacture.—It has already been remarked that the modern system of C. manufacture dates no further back than about 1760. Prior to the mechanical inventions of Hargreaves, Arkwright, Crompton, and Cartwright, the arts of spinning and weaving were entirely domestic, and the instruments of manipulation much the same as those which had been in use in the East for centuries before. By means of the ancient distaff and spindle, or the more recent spinning-wheel, only *one* thread at a time was produced, and the process, as may be imagined, was tedious, and not very remunerative; besides which, only a very inferior yarn was the result; for whilst a tolerable thread could be spun from flax, the produce of C. was soft, weak, and uneven, and in weaving was used for *weft* (or *transverse* yarn) only, with linen, woollen, or worsted for the *warp* (or *longitudinal* yarn). Altogether, in the middle of the 18th c., the machinery for spinning was much more imperfect than that for weaving, and the weavers of the time were often at a stand for want of yarn to go on with.

This state of things had long occupied the attention of the thinking portion of the spinners, but without any practical result until the invention of the 'jenny,' by Hargreaves, about 1767. By this machine, eight threads at a time could be spun against the one of the spinning-wheel. Hargreaves was much abused by the populace of his native town and neighbourhood, who feared that the invention

would deprive them of all employment; the machine was destroyed, and the inventor compelled to leave his birthplace. Genius, however, ultimately triumphed, and the 'spinning-jenny' was patented at Nottingham in 1770. The year previously, Arkwright had patented his 'water-frame,' or 'throstle,' for spinning by rollers, by means of which a stronger and much firmer yarn was produced. It was about this period that fabrics composed entirely of C. were woven for the first time, the 'jenny' supplying the *weft*, and the 'throstle' the *warp*. A few years later, Mr Crompton brought out a new piece of mechanism, which he styled the 'mule-jenny,' from its combining the principles of both Hargreaves' and Arkwright's patents; but it had an advantage over both, insomuch as it produced a much finer yarn than either. The 'mule' came into full play in or about 1780, which is the period assigned for the birth of the *muslin* trade. There was now no longer a scarcity of yarn; the fear was, that there would be too much, for it was clear that the hand-loom weavers of the time could not keep up with the improved spinning machinery. But the invention of the 'power-loom,' by Dr Cartwright, in 1785, set aside all doubts in this respect; the question now was, whether a sufficient quantity of raw C. could be obtained in order to keep pace with the requirements of the rising manufacture. West India C., which in 1784 averaged 1*s.* 6*d.* per lb., rose to 2*s.* in 1788; 2*s.* 1*d.* in 1792; and 2*s.* 8*d.* in 1798. Great exertions were made to obtain increased supplies from India; but the invention of the saw-gin in America brought the required succour from an unexpected quarter. It was only by means of this machine that the production of the short-stapled C. of the United States could be made at all remunerative. The export of hand-cleaned C. in 1791 was only 189,316 lbs., and in 1792 only 138,328 lbs.; but the year after the appearance of the gin—viz., 1794—the exports rose to 1,601,700 lbs.; in 1795, to 6,276,300 lbs.; and in 1800 to 17,789,803 lbs.

But to return. The first 'mule-jenny' contained about *thirty* spindles, which, instead of being stationary, as in the 'jenny' and 'throstle,' were placed on a carriage, which was moved outwards, in order, whilst twisting, to increase the fineness of the thread, and inwards again, to wind the yarn on the spindles. This required the constant attendance of a spinner to wheel the carriage backwards and forwards; but subsequent improvements have gone so far as to produce what is called the self-acting mule, two or three of which only require the assistance of one person, generally a boy or girl, whose place it is to piece any of the threads which may break during spinning. Mules of this construction are made with as many as 1000 or 2000 spindles, sometimes more; and with the self-actor, as now improved, a single thread has been produced measuring upwards of *one thousand miles in length*, and yet weighing but *one pound!*

A word or two on the processes preliminary to spinning. The raw material is received from the various producing countries, packed either in bags or square bales. On arrival at the mill, the C. first enters the *mixing-room*, where it is *sorted*, or the various qualities, which are often contained in a single purchase, laid out in layers of equal extent one over the other, and trodden close together. In this manner, two descriptions of C. are sometimes placed in one mixing. When Surat, for instance, is scarce and dear, and short-stapled low American plentiful and cheap, spinners of what are called coarse numbers invariably use a mixture of both growths; the same of other kinds, provided there is an approach to equality in length of fibre. C. of different shades of colour are also sometimes spun together, in order to produce a particular yarn. A quantity of this *bing*, as it is called, is then raked down from the top to the bottom of the side, a portion of each layer being thus secured. This is carried to the *scutching* or *willowing machine*, by means of which the C. is cleansed from all impurities, such as sand, seeds, leaf, &c. The cleaned C. is then taken to the *spreading-machine*, through which it passes, and is then wound, in a fleecy state, upon a large wooden roller, to be transferred to the *carding-machine*. The latter machine is brought into requisition for the purpose of drawing out the fibres of the C. into parallel layers, so as to facilitate the twisting of them together. Originally, this process was performed by hand. The first improvement was made by Lewis Paul in 1748, and the next by Hargreaves in 1760. Arkwright and subsequent spinners have perfected the machine. The C. was formerly cleaned by hand. The *sliver* is next passed through the *drawing frame*, which removes all inequalities, and reduces the bands to one uniform thickness. Here also several of the slivers are joined together (called *doubling*), so as to form one continuous cord, which is still further lengthened and increased in fineness by the *roving-machine*, whence it passes on to bobbins ready for *spinning*. Under the heads SPINNING and WEAVING, will be found a full description of the various processes above briefly glanced at. Other branches of the subject are treated of under CALICO-PRINTING; CALENDERING; DYEING, &c.

The finer kinds of yarn are spun from Sea Island and long-stapled Egyptian, and from them are fabricated our muslins, laces, &c. From Brazil and the better classes of short-stapled American, come our cambrics, calicoes, shirtings, sheetings, &c., and from the inferior qualities of American and Surat are spun the coarse yarns required for fustians and other heavy fabrics. Yorkshire broadcloths are sometimes half cotton. From warps of C., and wefts of wool or worsted, are formed varieties of Orleans cloths, Coburgs, mousselines de laine, damasks, &c. There are also fabrics composed of silk and C., linen and C., alpaca and C., &c.

Of the total amount of yarn produced, from one-fifth to one-fourth is exported in its raw state. The following figures will give the reader an idea of the progress of our export trade in C. yarns and goods:

	YARN.			MANUFACTURED GOODS EXPORTED.			
	Total Spun.	Total Exported.		Entered by the Yard.		At Value only.	Total Value of Yarn and Goods.
	lbs.	lbs.	£	Yards.	£	£	£
1816, . .	78,987,200	15,740,675	2,628,448	189,263,731	12,309,079	746,643	15,684,170
1830, . .	622,840,000	63,678,116	4,133,741	441,578,498	14,119,770	1,175,153	19,428,664
1845, . .	494,766,000	135,766,487	6,963,235	1,091,686,069	18,029,818	1,126,288	26,119,341
1860, . .	965,993,000	197,343,655	9,870,875	2,776,218,427	40,346,342	1,795,763	52,012,380
1874, . .	1,120,525,000	220,599,004	14,516,093	3,587,132,479	54,355,800	5,380,477	74,232,370

In 1818, 14,743,675 lbs. of twist were exported, of which 14,727,882 lbs. went to Europe, and only 1861 lbs. to India and China. In 1843, 149,206,448 lbs. were exported; 128,664,218 lbs. to Europe; 899,746 lbs. to America and Africa; and 12,642,484 lbs. to India and China. In 1874, of the 220,599,000 lbs. exported, 77,438,000 lbs. went to Germany and Holland, 62,781,000 lbs. to India, China, and Japan. In 1877, there were in all 227,651,402 lbs. of yarn exported.

In 1820, Germany was the best customer for both our plain and printed cottons. The next largest consumer for *plain* cottons was Italy; then followed the Brazils, United States, Russia, Portugal, East Indies, Holland and Belgium, West Indies, &c.; and for *printed* cottons—British West Indies, United States, Italy, Holland and Belgium, Portugal, East Indies, Brazil, &c. The Netherlands were the principal buyers of our laces and small wares; then Germany, British West Indies, Central America, Brazils, United States, East Indies, Portugal, Russia, Italy, &c. At the present time, the East Indies take nearly one-third of our exported manufactured goods. For *plain calicoes*, our next best customer is China; then follow Turkey, Brazil, Egypt, United States, Portugal, Italy, Germany, &c.; of *printed and dyed calicoes*, Turkey is the largest purchaser; then follow India, Brazil, Germany, United States, France, West Indies, Central America, &c. The United States take nearly one-half of our exports of *lace and patent-net;* then follow Belgium, France, Holland, Germany, &c. The United States take over one-third of our exports of *stockings*, and one-half of our shipments of other sorts of *hosiery;* then follow Australia, the Argentine Republic, &c. One-fourth of the *sewing-thread* exported goes to the United States; then follow Germany, Brazil, Russia, &c.

Subjoined is an estimate of the weight and value of the total production of cotton manufactures in Great Britain, with the cost of cotton consumed, and the balance remaining for wages, all other expenses, interest of capital, and profit for the years 1870, 1872, and 1874 (000's omitted; 1,071,770 = 1,071,770,000):

	1870.	1872.	1874.
WEIGHT.	lbs.	lbs.	lbs.
Cotton consumed,	1,071,770	1,175,345	1,266,129
Waste in spinning,	129,310	134,965	145,604
Yarn produced,	942,460	1,040,380	1,120,525
Exported in yarn,	186,078	211,940	220,599
Do. piece-goods, &c.,	616,232	698,840	726,000
Consumption and stock,	140,150	129,600	173,926
Total as above,	942,460	1,040,380	1,120,525
VALUE.			
Yarn exported,	£14,671	£16,710	£14,516
Goods, &c., do.	61,424	69,900	66,934
Consumption and stock,	17,050	15,660	20,110
Total,	£93,145	£102,270	£100,560
Cost of cotton consumed,	42,145	48,054	40,225
Left for wages, expenses, profits, &c.,	£51,000	£54,216	£60,335

The figures relating to the export of 'piece-goods, &c.,' include two-thirds of the goods shipped as apparel, haberdashery, &c. The average annual production of yarn and goods for the three years 1870-72, was 1,018,563,000 lbs., distributed as follows:

	lbs.	Per cent.
Exported to India, China, Japan, &c., including 47,000,000 lbs. yarn,	333,000,000	32·70
Exported to all other countries, including 150,166,000 lbs. yarn,	529,030,000	51·94
Left for Home Consumption and Stock,	156,533,000	15·36
Total as above,	1,018,563,000	100·00

In round numbers, therefore, it may be said that one-third of the total production of cotton goods is exported to the East, one-half to other countries, and one-sixth consumed at home.

With the great improvements which have taken place in the mechanics of the trade, and the reduced price of the raw material, a gradual but considerable decline has taken place in the cost and price of the fabrics produced. The price of 1 lb. of yarn containing 100 hanks, in 1786, was 38*s.*; in 1807, 6*s.* 9*d.*; in 1829, 3*s.* 2*d.*; at the present time, 2*s.* 6*d.* The *cost* of weaving during the last sixty years has been reduced upwards of sixty per cent. A species of calico, selling at 6*s.* per yard towards the close of the last century, can be purchased in our day at as many pence! The average price per yard of *goods* exported in 1815 was 1*s.* 5$\frac{1}{4}$*d.*; in 1825, 10$\frac{1}{8}$*d.*; in 1835, 6$\frac{1}{2}$*d.*; in 1845, 3$\frac{15}{16}$*d.*; and in 1859, 3$\frac{7}{16}$*d.* In 1864, the price rose to 6*d.* per yard, but in 1874 it fell to 3$\frac{5}{8}$*d.* per yard. The average price per lb. of *yarn* exported in 1815 was 3*s.* 7$\frac{3}{8}$*d.*; in 1825, 1*s.* 11$\frac{1}{2}$*d.*; in 1835, 1*s.* 4$\frac{3}{8}$*d.*; in 1845, 1*s.* 0$\frac{1}{4}$*d.*; and in 1859, 11$\frac{3}{4}$*d.* In 1864, the average rose to 2*s.* 4$\frac{3}{4}$*d.* per lb.; but in 1874, fell to 1*s.* 3$\frac{3}{4}$*d.* per lb. The most profitable years for spinners are said to have been 1845, 1848, 1859, 1860, and 1871.

The earnings of the work-people are higher at the present time than they have ever been before. The following table furnishes the rates current in 1839, 1849, 1859, and 1875. It will be observed that the proportionate advance during the past sixteen years has been much greater in the lowest than in the highest paid hands:

AVERAGE WEEKLY WAGES.

	1839. Week of 69 Hours.	1849. Week of 60 Hours.	1859. Week of 60 Hours.	1875. Week of 60 Hours.
	s. d.	*s. d.*	*s. d.*	*s. d.*
Steam-engine tenters,	24 0	28 0	30 0	32 0
Warehousemen,	18 0	20 0	22 0	26 0
Carding Department—				
Scutchers (women and girls),	7 0	7 6	8 0	12 0
Strippers (young men),	11 0	12 0	14 0	19 0
Overlookers,	25 0	28 0	28 0	32 0
Spinning on Self-acting Mules—				
Minders,	16 0	18 0	20 0	25 0
Piecers (women and young men),	8 0	9 0	10 0	16 0
Overlookers,	20 0	22 0	26 0	30 0
Throstle Spinning—				
Spinners (girls 14 to 18 years),	4 0	4 6	5 0	9 0
" (women),	7 0	7 6	9 0	13 6
Overlookers,	18 0	20 0	24 0	26 0
Ruling—				
Throstle reelers (women),	9 0	9 6	9 6	12 6
Warpers,	22 0	22 0	23 0	26 0
Sizers,	23 0	23 0	25 0	30 0
Doubling—				
Doublers (women),	7 0	7 6	9 0	12 6
Overlookers,	24 0	25 0	28 0	32 0

Other branches shew the same ratio of advance.

The following table exhibits the extent of the manufacture at the close of 1874:

Estimated weight of *cotton* consumed,		1,226,129,000 lbs.
" value of same, at 7$\frac{3}{8}$*d.* per lb.,		£40,226,000
" weight of *yarn* produced,		1,120,525,000 lbs.
Declared weight of yarn exported,		220,599,000 lbs.
" value of yarn exported (1*s.* 3$\frac{3}{4}$*d.* per lb.),		£14,516,000
Number of yards of goods exported,		3,587,132,000 yards.
Declared value of same (3$\frac{5}{8}$*d.* per yard),		£54,356,000
" " other cotton goods exported,		£5,380,000
Total declared value of all cotton manufactures exported,		£74,232,000
Total declared value of all British exports,		£297,650,000
Proportion of *cotton* exports to *entire* exports per cent.,		25 per cent.
Estimated number of persons employed,		479,000
" average rate of wages per week,		13*s.*
" total amount of wages paid in twelve months,		£15,190,000
ESTIMATED FIXED CAPITAL.		
Cost of 41,300,000 spindles, at 25*s.* to 27*s.* per spindle, inclusive of buildings, &c.,	£53,690,000	
Cost of 463,000 power-looms, at £26 each,	12,038,000	
		£65,728,000

ESTIMATED FLOATING CAPITAL.

Employed in carrying on the routine of business,	£18,000,000
Cash at bankers,	12,000,000
	£30,000,000

The average price of cotton consumed in 1860 was $6\frac{6}{8}d.$ per lb.; in 1861, $7\frac{5}{8}d.$; in 1864, 1*s.* $10\frac{1}{2}d.$; in 1867, $10\frac{3}{8}d.$; in 1871, $8\frac{1}{8}d.$; and in 1874, $7\frac{5}{8}d.$ The average prices of the principal descriptions in 1871 to 1875 were as follows:

	Uplands. Mid.	Pernam. Fair.	Egypt. Fair.	Dhollera. Fair.	Bengal. Fair.
1871, . .	$8\frac{9}{16}d.$	$8\frac{1}{2}d.$	$8\frac{7}{8}d.$	$6\frac{3}{4}d.$	$5\frac{7}{8}d.$
1872, .	$10\frac{9}{16}d.$	$10\frac{3}{8}d.$	$10\frac{1}{2}d.$	$7\frac{1}{4}d.$	$5\frac{1}{4}d.$
1873, . .	$9d.$	$9\frac{3}{8}d.$	$9\frac{11}{16}d.$	$6\frac{5}{16}d.$	$4\frac{1}{8}d.$
1874, .	$8d.$	$8\frac{1}{4}d.$	$8\frac{1}{4}d.$	$5\frac{15}{16}d.$	$4\frac{1}{4}d.$
1875, . .	$7\frac{3}{8}d.$	$7\frac{13}{16}d.$	$8\frac{7}{16}d.$	$5d.$	$4\frac{5}{16}d.$
1875, Dec. 31.	$6\frac{7}{8}d.$	$7\frac{1}{2}d.$	$7\frac{3}{8}d.$	$4\frac{11}{16}d.$	$4\frac{1}{8}d.$

Except Bengal, prices at the end of September and December 1875 were lower than since 1860.

The Cotton Famine.—The American civil war broke out in 1861, and in 1862 our import of cotton fell to 524 million pounds, against 1257 millions in 1861, and 1391 millions in 1860. Increased supplies from India and other sources brought the arrivals up to 669 millions in 1863, 893 millions in 1864, 978 millions in 1865. The war closed in 1865, trade with America was resumed, and the imports in 1866 rose to 1377 million pounds, and the cotton industry shortly afterwards resumed its former dimensions. At the crisis of the famine the mills were not working more than half-time, and in December 1862, 247,000 cotton operatives and others connected with the trade, were out of employment, and 165,000 others only partially employed. In the same month, 234,000 persons, or 24 per cent. of the total population of the districts affected, were in receipt of charitable relief. In 1863, the average number of persons out of work was 189,000, and that of those only partially employed, 129,000; in 1864, the figures were 134,000 and 97,000 respectively; and those for the first five months of 1865, 107,000 and 68,000. During the course of the famine, the losses of the trade amounted to between £65,000,000 and £70,000,000, including from £28,000,000 to £30,000,000 loss of wages to operatives. Of the latter amount about one-fourth was recovered in the form of relief, or in wages for employment in public works, &c. The total sum distributed in charity alone was about £3,000,000. In some districts in 1863, the poor-rate rose to nearly 6*s.* in the £. In the same year, the average rate for the whole of the cotton districts was 2*s.* $2\frac{3}{8}d.$, against only $7\frac{5}{8}d.$ in 1861. See also COTTON FAMINE, in SUPP., Vol. X.