

Time Line

Carpets throughout history.

The following information is intended as a research aid. Concentrating primarily on British carpet usage and production, some dates are disputed. We have attempted to include all the major developments in carpet making along with the most prolific and important manufacturers and designers.

- 7500 BC** (Palaeolithic age) Felt made from the bark of trees were probably the first movable rugs.
- 6000 BC** Evidence of goats and sheep being sheared for wool and hair and then spun and woven.
- 4000 BC** First evidence of Rush plaited matting found by archaeologists in Mesopotamia.
- 1480 BC** Egyptian fresco of handloom (discovered in 1953).
- 464 BC** Pazyryk rug woven, discovered in ice filled tomb, outer Mongolia.

13th Century

- 1271- 1295 AD** Marco Polo confirms rug making in Central Anatolia (Iran)
- 1299** Sultans of the Ottoman Empire developed and produced carpets for the court and export.
French knights brought 'Tapis Sarrasinois' rugs from the crusades, named after their Saracen foe.

14th Century

- 1327-1377** Reign of Edward III. In 1337 Edward III invited Flemish weavers into England and revitalised the cloth industry.

15th Century - 16th Century

- 1485-1603** Tudor and Elizabethan era - paintings show woven rushes on the floor.
- 1509-1547** Reign of King Henry VIII
- 1537** Robert Rothe (1550-1622) MP and Mayor of Kilkenny, Ireland, imports weavers from the East to make a rug for his estate.
- 1520** Cardinal Wolsey (c.1470-1530) receives 60 Turkish and Egyptian carpets, a gift from the Venetian Ambassador and the first of such carpets to be seen in England. Wolsey ordered more to furnish his palace at Hampton Court, which was later confiscated by King Henry VIII. An inventory compiled after Henry's death found over 500 carpets "of Turkey making" in the royal palaces, including 177 from Wolsey's home. At this time and through the 17thc very few carpets were used on the floor as they were too valuable. Portraits of Kings and noblemen often portray them standing on carpets as a sign of wealth and status.
- 1539-40** The Ardabil carpet made by Maksud the Keshani. One of a pair made for the Mosque of Ardabil in north-west Iran. One acquired in 1893 by the Victoria & Albert Museum. The other is in the Los Angeles Museum of Art. The V&A's carpet has a foundation of silk, a wool pile and a knot density at 300-350 knots per sq.in. 34 ½ ft by 17 ½ ft means it has 26 million knots in total.
- 1547-1553** Reign of King Edward VI
- 1550 -** Carpet knotting exhibited by Richard Hickey. First use of the word 'rug' in English, meaning coarse fabric.
- 1553-1558** Reign of Queen Mary I
- 1556-1605** Mughal Emperor Akbar and his son Jahangir made rugs from highest-grade Pashmina wool from

Himalayan mountain goats. Pashmina rug designs were of naturalistic flowers and their 'flower style' was evident in all items of Mughal art. The Islamic context conveyed ideas of abundance as well as spiritual and physical enlightenment with depictions of the gardens of paradise that everyone might enter after death. 1620 Jahangir encouraged the study of flora and fauna, and European books changed the depiction of flowers from Persian style to scrolling vines. The finish that was achieved had balance and harmony of pattern and the weave extremely fine. Some designs were created by the artists of Emperor Shah Jahan (1592-1658) the builder of the Taj Mahal. Only about 40 Pashmina Mughal carpets have survived, many only in a fragmentary state.

1558-1603 Reign of Elizabeth I

1577-1640 Pierre DuPont discovers the eastern technique for making pile carpets in silk and wool.

1580 Aubusson tapestry manufacture set up in Beauvais. Most workers came from Flanders.

1585 Ottoman Sultan Murad III requested Cairene weavers, along with Egyptian wool, be brought to the court at Istanbul. This event may explain the unexpected combination of materials, technique, and design often found in Ottoman carpets. An example in the Metropolitan Museum, New York, is covered with feathery leaves, stylized lotus flowers, and tightly curled cloud band scrolls, displaying characteristics associated with a group of carpets of debated provenance. While the wool and weaving methods of this group are akin to carpets woven in Egypt, their designs probably originated in Istanbul and influenced by Chinese porcelain.

17th Century

1601 King Henry IV of France takes over the Gobelins factory for tapestry making. Originally started by Jehan Gobelins who died in 1476, he had discovered a scarlet dyestuff. The family at that time were clothmakers and dyers.

1603-1625 Reign of King James I

1608 Henry IV of France commissions Pierre DuPont to make rugs and set up shop in the Louvre. Just before his death Henry decreed that, "all output from the Louvre Atelier (Workshop) was to be exclusive to the Royal family".

1615 The first consignment of carpets from Lahore in India was shipped from Surat to England. The sea route around the Cape of Good Hope afforded the Europeans the possibility of free trade, instead of the taxes paid on the overland route, through the Middle East.

1620 Peter Paul Rubens (1577-1640) Flemish Artist, painted the scene of his own drawing room. The floor bare, but tables covered with 'Turkish' carpets. Paintings are often used as windows to the past, amongst other items they can help date and identify carpets throughout history.

1625-1660 Reign of King Charles I

1627 Pierre DuPont was instructed by King Louis XIII to open a new shop: 'Hospice de la Savonnerie' to create knotted pile carpets for the residences of Kings and Queens of France, and to use as diplomatic gifts. Simon Lourdet became a partner in the former soap factory. The King made one condition that they employed 100 orphans on a 6-year apprenticeship. They made fine close woollen pile carpet of approx. 90 knots per sq. in., warps of linen and symmetrical knots used for the pile, a skilled craftsman taking a year to produce two and a half yards of plain carpet, with patterned ones taking longer. The designs included floral, military, heraldic, and architectural motifs.

1638-1715 King Louis XIV (The Sun King) came to the Throne in 1643. The French nobility, having bought luxury goods such as tapestries from Brussels, silk from Milan and lace from Venice, appreciated the fine textiles and furnishings made exclusively in France during his reign. France was to become world leaders in taste and technology. The Royal Manufactory's provided everything needed for the furnishing of Royal palaces. Throughout the period of Louis XIV's reign the factory of Savonnerie produced the most important tapestries and carpets made in France. The Government prohibited imports from the East, so the Royal factories flourished. It would take three years for two weavers to make a single tapestry of wool, silk and metal-wrapped threads. During his 72 Year reign the King

amassed 2,650 pieces of tapestry. 775 were made at Gobelins.

- 1647** Charles Le Brun (1619-1690) painter and designer, enters the service of King Louis XIV. The King said of him; "We wish to bestow on Monsieur Le Brun, our First Painter, a mark of esteem, that we hold for him and for the excellence of his works, which, it is universally acknowledged outshine those of the famous painters of the last centuries."
- 1655** Carpet factory built at the town of Wilton in Wiltshire.
- 1660-1685** Reign of King Charles II
- 1661** Jean-Baptiste Colbert (1619-1683) from 1661 till his death, was French Minister of Finances.
- 1661** Charles Le Brun became responsible for all the decorations of the Palace of Versailles.
- 1662** Colbert persuades King Louis XIV to take over the Gobelin tapestry factory and devote it to making general upholstery. The King makes Charles Le Brun director and artistic chief designer of the factory from 1663 till 1690. Under his artistic direction were made a series of 105 rugs for the Grande Galerie and Galerie d' Apollon in the Palais du Louvre between 1665-1685. Depicting acanthus leaves, architectural framing, and mythological scenes with emblems of Louis XIV's power.
- 1664** In Beauvais a Manufactory was set up by two Flemish weavers: Louis Hinart and Phillippe Behagle. Hinart, an experienced maker and merchant of tapestries, had a shop in Paris to sell goods that were made in his Flanders factory. Colbert persuaded him to transfer his looms to France under his patronage where he would be subsidised by King Louis XIV.
The Beauvais Royal Works remained a private enterprise although the Royal subsidies, amounting to 250,000 Livres and Royal purchases of 254 tapestries for 94,666 livres, were not enough to make the enterprise prosper. In 1684 Hinart retired. Philippe Behagle took charge but was only to receive 12,000 livres from the King.
- 1666** Samuel Pepys reputedly had some of the first ever glass-fronted bookcases made. He placed them in a room with a table, close covered or 'carpeted' and placed his reading desk on top, establishing the library.
- 1668** Phillip Lourdet began the celebrated ninety-three pieces of carpet for the grand gallery of the Louvre. The cartoons were painted by Eugene Baudin, Beaudrin Yvart and Gilbert Francart of Gobelins. Two of the pieces however were sent to the King of Siam in 1685.
- 1671** Lourdet's widow succeeded her husband as director of the establishment. In 1671 received 280,591 livres as payment for the carpets, only if she collaborated with the DuPont factory at the Louvre. In 1672 the Louvre factory was moved to the Savonnerie by Louis DuPont son of Pierre, not only making carpets but fire-screens and furniture fabrics.
- 1682** King Louis XIV moves his Court and government to the Palace of Versailles.
- 1685-1689** Reign of King James II
- 1685** King Louis XIV, after the revocation of the Edict of Nantes wanted France to become wholly Catholic. In doing so one million Protestants were left unprotected against religious intolerance. Many of the Huguenots, France's finest craftsmen, designers, silk and tapestry weavers and craftsmen emigrated, most to England and Holland where they prospered.
- 1689-1702** Reign of King William III & (1662-1694) Mary II
- 1694** Gobelin closes due to Louis XIV's financial difficulties (spending on his many wars) but was reopened in 1697 to make tapestries. Temporarily closed during the Revolution then reopened again by Napoleon.
- 1699** The Wilton Clothiers and Weavers were granted a Royal Charter to manufacture carpet.

18th Century

1702-1713 Reign of Queen Anne

1703-1770 Francois Boucher, artist, engraver and designer made director of the Royal workshops at Beauvais and then at the prestigious Gobelins factory in Paris. Boucher was a Court Painter for Louis XIV and a protégé of Madame Pompadour. Boucher painted a series of 20 paintings for Madame Pompadour's

chair coverings. The art of Francois Boucher was typical of the Rococo period with its balancing of fantasy with reality, from nudes and cherubs to landscapes and portraits. He also designed decorative works and tapestry for the Aubusson factory.

- 1714-1727** Reign of King George I
- 1715** King Louis XIV dies
- 1723** Francois Boucher wins the Prix de Rome.
- 1725** Pierre-Josse Joseph Perrot, (1678-1750) French ornament painter, had designed his earliest carpet for the King's throne room at Versailles. At both Gobelins and Savonnerie he moved the designs from bold Baroque to dainty Rococo, using light colours and delicate compositions.
- 1727-1760** Reign of King George II
- 1728-1792** Robert Adam, Scottish born architect who became renowned for the designs of his neoclassical style plasterwork ceilings matched with the designs of his carpets. At Harewood House, can be seen one of Adam's greatest commissions.
- 1733** John Kay patented new equipment for opening and dressing wool which included the "flying shuttle" where the shuttle was mounted on a track and fired from side to side using paddles when the weaver jerked a chord. This allowed a single weaver to weave at a faster rate than 2 or 3 weavers at a single loom. This invention placed pressure on the spinning process to increase production and also encouraged its mechanisation. John Kay was to later collaborate with Richard Arkwright in the invention of a superior spinning technology.
- 1734** Jean-Baptiste Oudry (1686-1755) French Rococo painter, engraver and tapestry designer, made director of the Beauvais tapestry works which flourished under his direction. Francois Boucher designed 45 tapestries for Beauvais. Oudry's services were sought by Tsar Peter the Great of Russia, and the King of Denmark amongst others, which he turned down preferring to stay in France.
- 1735** John Pearsall & John Broom set up in Kidderminster making reversible double cloth. Broom is reputed to have brought back the secrets of Brussels weaving from his travels. These were reversible cheap carpets, instrumental in bringing carpets to the masses. The last "Kidder" carpet was woven by them in 1932 and looms dismantled in 1936.
- 1736** Jean-Baptiste Oudry made inspector general at Gobelins.
- 1737** Thomas Whitty (1716-1792) from Axminster set up a cloth-weaving business.
- 1741** Henry Herbert the 9th Earl of Pembroke, known as the 'architect Earl', persuades weavers from the Savonnerie factory to work in Wilton and teach locals to make the Brussels carpet. (Legend has it that the Duke smuggled the weavers out of France in wine barrels). Brothers Antoine and Pierre Jermaule were brought to Wilton to establish the industry.
- 1742** The Wilton factory, under direction of Defossee, is said to have developed the method of cutting loops of Brussels weave to make a nap, producing a velvet-like quality known as "Moccadoes". Wilton were granted exclusive rights to produce 'new' cut pile carpet that became known as "Wilton Carpet". Although the method was stolen by a rival after the patent was changed.
- 1742** King Louis XV (1710-1774) gave Ottoman sultans Savonnerie carpets amongst other gifts. The greatest period of Savonnerie rug production was 1650-1789. Pierre-Josse Perrot designed carpets for Savonnerie between 1740 and 1750.
- 1743** Aubusson began manufacturing pile carpets. The tapestry technique, already used in the district, became known as Aubusson flat woven carpet. The pile carpets copied the style of 'Savonnerie' carpets, but, were a cheaper alternative and became popular with the upper-classes. They copied Oriental designs, such as Ushak medallion carpets. Later tastes changed, turning to floral and architectural designs.
- 1738** Lewis Paul, a Huguenot weaver, settled in Birmingham and, with John Watt, patented the Rolling Spinning Machine and the flyer-and-bobbin system for drawing wool to a more even thickness, using two sets of rollers that travelled at different speeds, meaning yarn could be twisted and spun quickly. Later to be installed in the first cotton spinning mill.
- 1748** Lewis Paul invented the hand-driven carding machine, later developed further by Arkwright and

Crompton. In 1758 their roller spinning machine was used on Arkwright's Water Loom.

- 1750-1850** The century saw the population increase in the UK from 7 to 18 million and the Industrial revolution saw inventions developed by Hargreaves, Arkwright and Crompton for the textile industry. Cartwright and Watt's steam engine sparked the end of cottage industries.
- 1750s** Thomas Whitty travelled to London, he marvelled at the carpets from Turkey and began to puzzle how they could be made in England.
- 1750** Peter Parisot, birth name was Pere Norbert, (1697 -1769) from Lorraine, attempted to set up a weaving manufactory in London, during which time he became known to members of the Royal family and aristocracy. Two refugee Frenchman from the Chaillot Factory arrived in London and started weaving a specimen carpet, but finding themselves in difficulties they approached Parisot and he introduced them to Prince William (Duke of Cumberland) who helped to furnish funds for their workrooms at Paddington and then in Fulham.
- 1751** Parisot sets up a training school in Fulham under the patronage of Prince William, and hires workers from France. He fires the original Savonnerie weavers for their 'extravagant demands.' In 1753 he wrote and published, "An account of the new manufactory of Tapestry after the manner of that at the Gobelins, and of carpets after the manner of that at Chaillot now undertaken at Fulham by Mr Peter Parisot." A piece of carpet by Parisot, a chair back, was once framed on a wall in the National Trust Property, Clandon Park in Surrey before it was destroyed in the 2015 fire.
- 1752** Moorfields of London opens. Thomas Moore (1700-1788). Maker of carpets for architects like the Adam brothers. He hires the two Savonnerie Frenchmen that were sacked by Parisot. Their specimen carpet was finished and sold to Prince William, who presented it to Princess Augusta of Wales. (Today Moorfields Eye Hospital is on the site that was once his factory).
- 1754** Royal Society of Arts Founded
- 1755** Claude Passavant a Swiss Huguenot, purchased a London workshop.
- 1755** Thomas Whitty of Axminster, enthused by an entrepreneur's desire to make fine carpets wanted to produce them faster, wider and cheaper. He visited London and made the acquaintance of a weaver from Parisot's factory at Fulham and tricked him into giving him a tour of the premises. Duplicating the vertical upright loom he conducted trials and succeeded in making an eight-inch square of Turkey type carpet. Parisot's upright loom could be built to great widths and was attached to the ceiling for support. Several weavers sat in a row and each worked a comfortable width of 27 inches, first weaving a few rows of wool weft, then, as if making a Turkey carpet, putting in a row of Turkish knots using ready-cut dyed wool. Robert Adam ordered carpets for, amongst others; Saltram House, Rockbare House, Powderham Castle and Uppark, all attributed to Whitty.
- 1755** Peter Parisot moved his looms to Exeter. Some of his weaver went with him, others chose to stay in London working for his rival, Thomas Moore. He was awarded the Royal Warrant by King George III . The French authorities stopped Parisot enticing French workers to England. The factory went bankrupt later that year and Parisot fled the country to escape his creditors.
- 1756** Claude Passavant took over Parisot's factory. Not able to speak English and not able to return to France the French workers had little choice but to work for him. He also gave work to the poor from the streets, bringing them to Exeter from London.
- 1757** Royal Society of Arts awarded a prize won by both Whitty and Moore jointly. He won again the following year sharing the prize with Claude Passavant. In 1759 Whitty was the outright winner. Whitty recounted in his memoir of the Axminster manufactory, "That although Thomas Moore's carpet was made of the finest materials and was valued at 40 guineas, while Claude Passavant's came to the "exorbitantly high" price of 80 guineas. His own, of about the same size was priced at only £15, deemed best value". Whitty's carpet was the first of many bought by William Crompton for his warehouse in Charing Cross.
- 1757** Thomas Moore, having employed Parisot's French weavers, his carpets had many of the same features as Parisot's manufactory. Carpets were wool throughout and sometimes he used multicolour weft threads. He did not always sign his carpets, and the wefts were never pulled as tightly as those

of Exeter. He also used the method of "counting warps" for ease in reading cartoons, sometimes a multicoloured thread every 20 warps, sometimes a simple knotting together of every nineteenth and twentieth warp thread.

- 1758** Petworth House, West Sussex, has a wool and linen carpet made by Passavant from the Exeter carpet factory designed by Parisot. One of only 3 remaining and dated Exeter carpets. They can be easily distinguished from others of the same knotting technique by their tightly pulled multicolour wefts, their "counting warps" and by the signature, "Oxon," woven into the border with the date beside it. The one at Petworth House is an example, dated 1758.
- 1759** Axminster's earliest datable carpet example is in the Blue Drawing Room of Adam brothers design for Dumfries House, Ayrshire. An invoice survives for Axminster Carpet dated 8th March 1759 for £33.6s. Axminster carpets were popular, because they were cheaper, although in the room next door at Dumfries there is a Moore Carpet, as well as the over-mantle Savonnerie.
- 1760-1820** The Reign of King George III
- 1761** Exeter Carpet Factory goes bankrupt.
- 1764** James Hargreaves (1720-1778), invented the eight spindled Spinning-Jenny. The story told is that his daughter Jenny knocked over the spinning wheel owned by him. The spindle continued to run giving him the idea that a whole line of spindles could work off one wheel. When they were bought by manufacturers they were hidden, as the workers tried to destroy them which was the fate of Hargreaves own Spinning Jenny. His invention contributed to the Industrial Revolution. Hargreaves filed to patent his machine in 1770 but the court refused his application on evidence that he had already made and sold many of them before filing for a petition. When he died, a poor man, it is estimated that 20,000 Spinning Jenny machines, mainly unlicensed, were being used in Britain.
- 1769** Richard Arkwright invented a spinning machine which used the drawing roller method invented by Lewis Paul in 1738. It was constructed with the assistance of John Kay. The cotton fibres to be spun pass through four pairs of rollers geared so that fibres pass through the slowest first and then the faster ones, so they become attenuated. The cotton passes to the bobbin through hooks on the flyer. The rotation of the flyer gives one turn of twist. The amount of thread wound onto the bobbin and the degree of twist is dependent upon the differential speed. The machine could only be used for spinning the hard and strong warps, not wefts.
- 1775** James Watt patented the improved Steam Engine, initially for pumping out mines.
- 1775** Karl Wilhelm Scheele, a talented inventor well known for his chemistry, invented a bright emerald green dye that was made with arsenic. The scientific name of arsenic is copper of arsenate, and Scheele knew how poisonous it was, but sold it anyway. Used in wallpaper, clothes and as a food colourant. Carpets with this colour became most popular during the later Victorian era.
- 1775** Arkwright Improved the spinning machine, known as a "Water Frame". These spinning machines were driven by water power at Arkwright's Cromford Mill. By 1777 the "Water Frame" had completely replaced the Spinning-Jenny in Britain.
- 1780-1792** Beauvais tapestry manufacturer in France started weaving carpets.
- 1780** Samuel Crompton ceased weaving in order to concentrate on spinning. He used hand-driven versions of his mule, which he set up in the various houses he and his family occupied and became a merchant as well as manufacturer, operating from a warehouse in Bolton.
- 1783** William Brinton began to manufacture spun yarns in Chaddesley, Kidderminster.
- 1784** Edmund Cartwright (1743-1823) patented the first power loom, an improved version of the handloom, but at first many thought his ideas too complicated. He was inspired by Richard Arkwright's cotton spinning mills at Cromford in Derbyshire and his later patented invention of 1789 served as the model for later inventors like William Radcliffe and Thomas Johnson.
- 1788** Thomas Whitty starts a factory in Kilmarnock making 2ply cloth. To furnish his own home, he needed a cheaper alternative to the expensive tufted carpet..
- 1789** King George III, Queen Charlotte and three of their children visit the Axminster factory. Queen Charlotte ordered carpets and left a handsome sum for the workforce.

- 1790** Brinton, previously clothmakers, started making carpets.
- 1790** Robert Grimshaw erected a weaving factory at Knott Mill Manchester, which he intended to fill with Cartwright looms but with only 30 in place the mill was burnt down. Possibly an act of arson inspired by fears of job losses by the hand-loom weavers.
- 1790** It became the fashion to match carpets to ceilings. Axminster carpets now grace grand buildings such as the Brighton Pavilion and the throne room at Carlton House, and Thomas Whitty also supplied the palaces of the Sultan of Turkey.
- 1791** William Sprague starts the first woven carpet mill in Philadelphia USA.
- 1793** Thomas Whitty dies and is succeeded by his son Thomas Jr, who dies in 1799 leaving the business to his 24-year-old son, also called Thomas, assisted by his younger brother Samuel.
- 1794** Moore of Moorfield. British carpets had become popular in the wealthy homes of America. A Moore carpet was seen by Henry Wansey in 1794 when he visited the Spruce Street house of William Bingham, the “rulers of the Republican Court” a house modelled on the Duke of Manchester’s estate in the West End of London. Mr and Mrs Bingham had brought back from their 1787 European tour: “Everything for the house and table which the taste and luxury of the time had invented.” Henry Wansey described in his journal the elegance of the drawing room: “The chairs of the drawing room were from Seddon’s in London, of the newest taste; the back in the form of a lyre, with festoons of crimson and yellow silk. The curtains of the room a festoon of the same. The carpet one of Moore’s most expensive patterns.”

19th Century

- 1800** Moorfields goes bankrupt (one of Whitty’s last English competitors).
- 1803** John Crossley (1772-1837) Crossleys Carpets start in Halifax buying out the only other carpet manufacturer in Halifax, Abbott and Ellerton. He renewed the lease on Dean Clough Mill and by the time of his death he employed 300 people. The company was carried on by his 3 sons John, Joseph and Francis.
- 1810** Samuel Ramson Whitty takes over the Axminster factory after his brother dies in his mid-30s.
- 1811** Samuel Crompton undertook a survey of cotton spinning spindles. Since he had not patented the mule, he sought compensation by means of a parliamentary grant by demonstrating the importance of the mule. His survey compared numbers of jenny, water-frame and mule spindles used for cotton spinning within a thirty-mile radius of Bolton. The survey showed that mule spindles approached 90 per cent of the total. This plainly gave him powerful ammunition in making his case.
- 1815** Fine hand-made carpets were in decline due to the Napoleonic War, competition from European trade and machine-made carpets. Between 1807–1838 more looms were introduced in Yorkshire, Scotland, and in Kidderminster, increasing in number from 1,000 to 2,000. Of the latter 1,750 were Brussels looms, the others apparently weaving the Kidder carpets.
- 1820** Brinton established his first factory in Kidderminster.
- 1820** Joseph Marie Jacquard (1752-1834) The Jacquard loom comes to England. Originally the idea was formed to improve the work of Bouchon who had the punch card idea with paper tape in 1725. His co-worker Falcon improved it by means of card, but their loom was only semi-automatic. Vaucanson made the world’s first automated loom in 1745. In 1790 Jacquard was trying to develop the loom further, but the French revolution halted development. Jacquard had already in 1790 demonstrated an improved silk draw loom, for which he was awarded a bronze medal. In 1804-5 he added an attachment, which any loom that then used it was called a Jacquard loom. In 1806 the loom was declared public property. Jacquard was rewarded with a pension and royalty on each machine. He had improved the punch card system that enabled a loom to weave complex patterned cloth. There was hostility towards him as many silk-weavers lost their jobs. Looms were set on fire and Jacquard himself dunked in a canal. In 1819 Jacquard was awarded a Gold medal and the Cross of the Legion of Honour. He had transformed the Lyon silk weaving industry and its impact was to be felt world wide.

- 1822** King George IV commissioned Samuel Whitty of Axminster to make the Saloon Carpet for The Royal Pavilion costing £1000. He also supplied the Banqueting Room and Music Room carpets. Queen Victoria disliked the brash blue colour of the Music Room carpet, had it removed, bleached to a beige colour and had it cut up to be used in the guest bedroom at Buckingham Palace. The blue Music room carpet was reconstructed in 1986. One of the largest carpets, depicting a blazing sun, moon and constellation of stars, was made for the Sultan of Turkey. Measuring 74ft x 52ft it took 30 men to move it when it was displayed in the Church for all to see. The cost was in excess of one thousand pounds.
- 1824** In Scotland people were becoming more prosperous and could afford better carpet. In Kilmarnock they were making the new, flat weave, 3ply carpets which were thicker, more comfortable to walk on and deadened the sound of footfall. In addition, there was a greater number of colours and more varied designs, making Scotch and later the South's Kidder carpeting, famous.
- 1825** The Brussels looms in Kidderminster were changed to the Jacquard method.
- 1828** Joseph Southwell, who was first recorded as a carpet weaver in the town of Bridgnorth in, established a factory, Southwell & Co in the county of Salop. In 1860 it was taken over by Thomas Martin Southwell and Henry Foxall Southwell, and the firm renamed 'H & M Southwell' and remained in family ownership until 1943.
- 1828** Michael Nairn of Kirkcaldy produced canvas to sell to the floor-cloth trade. In 1861 his son Michael Barker Nairn joined his mother and brother Robert in the firm and patented inventions for floor cloths, power looms and linoleum.
- 1828** Savonnerie transferred their business to the Hotel des Gobelins, Paris.
- 1828** Samuel Whitty's Silver St. factory was destroyed by fire, but a year later a larger one was built on the same street.
- 1829** James Templeton (1802- 1885) opens a shawl making factory with William Quigley as an employee. The shawls were made of either wool, cotton or silk or a combination of all three. Nearly all this weaving was done at home or in small shops in which would stand six or eight looms. Each loom was owned by its weaver who paid a weekly amount for 'standing' to the landlord. In some cases the looms were owned by one person who let them out to the poorer classes.
- 1830-1837** Reign of King William IV
- 1833** Joseph-Louis Gay-Lussac and Theophile-Jules Pelouze. The first Polyester formation has been attributed to them, although they didn't realize what they had made.
- 1834** William Morris (1834-1896) trained as an architect, became a craftsman, designer, poet, printer, socialist, novelist and environmentalist. He revived the Arts and Crafts movement. Morris produced hundreds of designs for textiles, including tapestries and superb hand-woven carpets. He loved Persian and Oriental carpets and always maintained the pattern in carpet design should avoid the uncomfortable feeling of walking over a surface that simulated three dimensions.
- 1833-34** Richard Whytock invented and patented the Tapestry Carpet Weaving Loom, forming Richard Whytock & Co, of Lasswade. He evolved the idea of using a large drum, onto which worsted yarn could be wound. Large drums loaded with yarn were used to produce the same coloured thread for several hundred carpets. These drums could be anything up to 72 feet in circumference. Almost unlimited colours could be used. (Wilton and Brussels carpet had limited colour choice).
With Tapestry Carpeting the structure and method of manufacture and that of Tapestry weaving are entirely different and can be confusing. Wilton carpets made with cut pile were called Tapestry Velvet. Machine-made tapestry carpets were also called "ingrain" carpets because the wool or worsted is dyed 'in the grain' before manufacture. Tapestry Carpet Looms differed from the Brussels and Jacquard allowing an unlimited number of colours to be used, compared to only five or six that were available in other loom processes. Whytock's loom was one third the size of the Brussels loom.
- 1835** Axminster Closes. Whitty's grandson, Samuel Ramson Whitty becomes bankrupt after fire once again destroys looms and stock in the struggling Axminster factory. Also lost were the written records and the working drawings for his carpets

- 1835** Wilton installed some of the Axminster looms to produce Axminster carpets.
- 1837-1901** Reign of Queen Victoria
- 1837-39** Erastus B. Bigelow (1814–1879) of America and William Wood of Pontefract, Yorkshire, argued as to which one was the first to perfect the Jacquard Brussels Carpeting loom worked by steam. (Within one year of this invention US carpet production had doubled).
- 1839** James Templeton & Son established their first factory in Glasgow. A process invented by Quigley for processing Chenille yarn into compact C-shaped tufts, enabling complex patterns to be created, led Templeton to recognise this as ideal for carpet manufacture. Quigley and Templeton took out a patent calling them “Patent Axminster”, describing them, “In such manner that the weft or lateral fabrics of both cut edges of each stripe are all brought on one side and into close contact with each other.” Quigley made over his interest to Templeton for a lump sum with a promise of later employment. Six months later, Quigley sailed for America. They had perfected the Chenille Axminster loom, a cheaper alternative to tufted Axminster and on which it was possible to weave a complete seamless carpet in a wide range of colours and patterns. James was joined by his brother Archibald and brother-in-law Peter Reid in 1843. By 1851 Templetons employed 400 people and had a capital of £14,000.
- 1840** Crossley. Three years after John’s death, his sons John, Joseph and Frank had built a series of spinning mills and weaving sheds in the Hebble Valley. The Mills were named after the alphabet: A Mill first in 1840, B a year later, then over 30 years later H was ever bigger and grander. By the end of the century Dean Clough Mill was more than a million square feet, employing 5000 workers. The brothers shared their wealth, building an orphanage near Kings Cross, Alms houses for the elderly in Arden Rd. John was twice the Mayor of Halifax and gave the land to build Halifax Town hall in 1863. They became the biggest carpet manufacturer in the world. Avena Carpets, Halifax, were carpet manufacturers directly descended from this company and still using Crossley looms, but were wound up in 2016.
- 1840** Richard Whytock formed a partnership with Henry Henderson of Dunfermline with premises along the banks of the River Esk. The company produced Persian and Turkish style hand knotted carpets, making it possible for millions of homes to have carpets that people could afford. During the Victorian era carpets were in all rooms of people’s houses.
- 1840** Brussels, and other machine woven fabrics which could be produced so much cheaper, were successfully challenging the sale of hand-tufted carpets. Another element in the production of cheaper grades was the introduction of Jute into the country early in the nineteenth century.
- 1847** John Fielden MP (1832-1847). Fielden, a reformer and part of the Fielden Brothers Cotton Manufacturers of Todmorden, took between 1816 –1847 to get the Factory Act passed: ‘That no child or young person 13-18 should work more than 10 hours a day.’ Although Fielden thought 10 hours still too long, he supported it as a compromise to Parliament to get it passed. Sir Robert Peel was one who was opposed to it as he himself was in the cotton industry.
- 1847** Jons Jakob Berzelius also discovered polyester formation and didn’t realise it!
- 1848** Bigelow patented a further power loom for weaving Scotch or Kidder carpets.
- 1851** The Great Exhibition. Wilton, Templetons, and other carpet manufacturers exhibited. Bigelow introduced a steam powered Brussels loom and demonstrated it at Hoobrook in Kidderminster.
- 1851** Control of Poisons Bill. Arsenic was classed as an irritant poison in the 19th Century and was replaced with copper carbonate. By 1845 it was banned in several countries but not till later in the UK (The 1868 Arsenic Act) and America. In 1880 William Morris, under mounting pressure, stopped using it as a dye.
- 1852** William Grosvenor builds a steam driven factory in Green Street, Kidderminster.
- 1854** George Crompton, now working in America for Samuel Colt, patented an improved design to his father’s loom, adding 60% to the operating capacity and reducing labour to run it by half. He won the top prize at the Paris Exposition competing against the best looms from Britain, France and Belgium.
- 1856** Templetons first factory was destroyed by fire on Xmas Day.
- 1857** James Templeton built a new factory. Having diversified to produce Brussels picture carpets, in 1860

his capital exceeded £335,000.

1857-1941 Charles Frances Annesley Voysey was one of the most original and influential architects and designers of textiles and all forms of decorative arts at the end of the 19th Century. Voysey evolved a style which was universally acceptable. His most interesting designs were dominated by flowing patterns incorporating pastel-coloured birds, animals, hearts, flowers and trees in silhouette. His motto the 'Head, Hand and Heart' became the motto for the Society of Designers in 1896. These three words are also the keys to understanding Charles Voysey's focus. The 'Head' for creativity and imagination, the 'Hand' for skill and craft and the 'Heart' for honesty and for love.

1855 Audemar, a Swiss chemist patented a chemically modified cellulose. He dissolved the fibrous inner bark of a mulberry tree, chemically modified it to produce cellulose. With this he formed threads by dipping needles into the solution and drawing them out. 1880 Sir Joseph Swan an English chemist and electrician experimented by forcing cellulose liquid through fine holes into a coagulating bath. Thomas Edison's incandescent lamp gave him the idea, working like the carbon filament found in Edison's invention.

1856 Sir William Henry Perkin (1838-1907) was a British chemist and entrepreneur best known for his serendipitous discovery of the first synthetic organic dye, mauveine, derived from coal tar. In 1856 he filed for a patent, then aged 18, and became successful in the field of dyes after this first discovery. Perkin and his brother realised that they had discovered a possible commercial substitute for Tyrian Purple, an expensive dyestuff sourced from the glandular mucus of certain molluscs. Perkin set up a factory to produce the dye industrially. After mauveine, other new aniline dyes appeared, some discovered by Perkin himself including Britannia Violet and Perkin's Green. Eventually factories producing synthetic dyes were constructed across Europe.

1860 Frederick Walton (1834-1928), rubber manufacturer, opened a factory in Chiswick after which he patented his discovery of observing the skin produced by oxidised linseed oil that formed on paint. He invented and patented Linoleum in 1863, derived from Linum, the Latin for flax and oleum (oil), Linoleum was made of Linseed oil, pigments, pine rosin and pine flour. In 1864 Walton formed the Linoleum Manufacturing Company in Staines exporting to Europe and the US. The product was first plain with no design until the mid-1930s. In 1877, together with Fredrick Thomas Palmer they also invented Anaglypta and Lincrusta (two types of embossed wall coverings). Although Linoleum became really popular when Michael Nairn of Scotland introduced inlaid patterning it was gradually replaced by vinyl in the 1960's.

1861 William Morris founded his firm, Morris, Marshall, Faulkner & Co.

1862 Limited Liability Company legislation brought in.

1864 John Crossley & Sons was formed to take advantage of the Limited Liability Company legislation of 1862, and four fifths of the shares were retained by the sons of John Crossley. By then they had factories at Halifax and Kidderminster and warehouses in London and Manchester.

1864 Henry Widnell employs Pierre Langlade (1812-1909) at Lasswade. Langlade was a famous carpet designer and artist with Aubusson, specialising in artistic designs and flower painting. Aubusson had already had ties with Widnell & Stewart of Bonnyrigg, since 1856, as Scottish workers taught the French the Whytock printing process for Tapestry carpets. Langlade, having worked along-side the Scots, moved to Bonnyrigg and worked at Lasswade for more than thirty years.

In 1868 Lasswade, the thriving carpet factory, was dismantled and removed, most of the machinery going to Roslin and the remainder moving to Bonnyrigg, where another factory was set up. Roslin had been acquired to extend the carpet making production. The weavers and workers moved from the village to these new factories. Lord Melville, who leased the site in Lasswade, had promised his neighbour, the Duke of Buccleuch, that he would not renew the lease when it expired because the Duke had complained about the pollution of the River Esk, which flows through his grounds at Dalkeith House. The pollution, however, continued and the carpet factory removed to Roslin, which was two miles further up the river. Development of Axminster carpet continued well into the 20th century and Spool Axminster offered virtually no limitation of colours, but involved bulk production

runs, whilst Gripper Axminster offered limited colours and short runs per design.

- 1867** Paris Exhibition. Templeton exhibited a picture carpet: 'The Twelve Apostles Carpet'.
- 1867** Parliamentary Act passed so that workers between 8–13 years of age had their hours reduced to allow them to receive 10 hours education per week, but it would not be until the closing years of the century that the majority of children began to be treated as children, not as miniature adults.
- 1869** Tomkinson Carpets established in Kidderminster as Tomkinson & Adam, a partnership lasting until 1926.
- 1871** Arthur F Stoddard took over the tapestry factory of Ronalds at Elderslie, Glasgow.
- 1875** Morris & Co. became the name of William Morris's company. He could never afford the necessary machines to by-pass the lengthy hand-working involved in manufacture, which inevitably meant that the 'Morrisian' style was very expensive to achieve. The irony was that while he aimed at giving a wonderful experience to many, the high costs of labour ensured that only the rich could afford his goods. For instance, the hand-woven 'Hammersmith' carpets cost as much as four guineas per square yard, which was a huge sum at the end of the 19th century, far beyond the means of the average middle-class household. His products have survived owing to the durable quality of the materials and the meticulous hand-work. J W Mackail's biography of William Morris (pub. 1899) records the fact that the very high cost of the decorations carried out by the Firm in the Green Dining Room at the South Kensington Museum, (now the V&A), came to be seen as a good investment as the scheme had not required any repairs or maintenance beyond the repainting of the ceiling in the space of thirty years.
- 1876** William C. Gray started producing carpets on two hand-loom in a shop in Carrick St Ayr. Moving to Newton-on-Ayr in 1877 as production increased.
- 1876** Halcyon Skinner in America, hired by Alexander Smith a carpet manufacturer in 1851, invented the Spool Axminster. This hand-loom could weave figured, instead of striped, carpets and by 1851 Smith had one hundred looms at work. In 1876 he patented the Moquette or Royal Axminster loom which enabled the use of unlimited number of colours and designs. It became known as Spool Axminster because of the endless chain of spools carrying lengths of coloured yarns, wound in a predetermined order, allowing short pieces to be cut and inserted as the tufts.
- 1877** Michael Nairn became the largest producer of linoleum in the world.
- 1878** Tomkinson of Kidderminster's greatest coup was to obtain English rights to the Halcyon Skinner loom. In 1879 Tomkinson Carpets produced their first Royal Axminster.
- 1878** Count Hilaire Chardonnet (1839-1924). While working in a photographic darkroom this French chemist spilt nitrocellulose, and when he started to clean it up he saw that it had become viscous due to evaporation, and as he wiped it away, he noticed strands of fibre resembling silk. Experimenting further with nitrocellulose, he worked with the silkworm's food mulberry leaves, turning them into cellulose pulp with nitric and sulfuric acid, stretching the resulting pulp. He Received his first patent in 1884 for Artificial Silk and showed artificial silk at the Paris exhibition. In 1891 he built the first commercial plant at Besancon in France. Later the "Art Silk" came to be known as Rayon.
- 1880** William C. Gray & Sons develop the seamless Kidder carpet. The business had increased substantially and a new factory is built at Newton-on-Ayr.
- 1880** French pile carpet manufacturers began to adopt similar carpet power-loom, as those at Bigelows, importing them from England. These machines, for weaving pile carpets, either looped (bouclé) as in Brussels, or cut (velouté) as in Wilton or Axminster carpets, were similar in all respects to those that had been in use by the important English manufacturers such as Crossley of Halifax, Templeton of Glasgow, Humphreys of Kidderminster, Southwell of Bridgnorth, and others.
- 1886** William C Gray & Sons patented the Akbar Carpet Loom, described as a square with two beams. They produced plain, reversible, 3 ply carpeting marketed as Seamless Art Squares together with Brussels Loop, Wilton Pile, and Chenille Axminster.
- 1889** Templeton's factory witnessed a terrible accident when part of an extension wall collapsed during high winds whilst under construction, trapping women working in the weaving sheds: 29 were killed, the

youngest 14 the oldest 25, and 32 others injured. The men had left at 5pm, but the women weren't due to leave till 6pm. At 5.15pm a five-storey mill building fell onto the weaving shed. Templeton paid for their funerals and a relief fund was started raising £9,000 for the families. A memorial was built for the 29 women with a plaque that reads; 'Green buds, for the hope of tomorrow. Fair flowers, for the joy of today. Sweet memory, the fragrance they leave us. As time gently flows on its way'.

Scotch carpets were the most extensive productions, but Brussels and Wilton were also woven there.

The wages of the male carpet and rug weavers are stated to run from twelve shillings to fourteen shillings per week. The factory was completed in 1892 of Venetian style, and is renowned as a masterpiece in world architecture by Scottish architect William Leiper (1839-1916). The flamboyant glazed brickwork pays homage to the Oriental influenced patterns of the carpets the factory produced.

1890 Brintons Patented the Axminster loom. The Gripper Axminster had advantages over traditional Spool Axminster and later the two techniques were combined in the Spool-Gripper Loom.

1891 The Great Exhibition in Vienna increased Western interest in rugs.

William Morris founded the Kelmscott Press to publish limited-edition illustrated books. The Kelmscott Chaucer, was completed shortly before his death.

1892 Charles Frederic Cross and Edward John Bevan took out the British patent on the production of Viscose fibres invented by Hilaire De Chardonnet. Licenses were granted for its use in 1893 and soon afterwards Viscose was being used as an alternative to silk in carpets and rugs.

1895 Stewart Brothers of Eskbank and Henry Widnell & Co were sold to Henry Widnell & Stewart Ltd for £270,000 who were only making tapestry carpets. The Axminster loom and the process for making this type of carpet was now firmly established and the machinery rapidly improved.

1896 C. F. A. Voysey designed a carpet woven by Tomkinson and Adam using a woollen pile and jute warp which is now in the V&A Museum.

1897 H & M Southwell presented a carpet to Queen Victoria for her Golden Jubilee, and at the end of the first world war presented a victory carpet to the Palace. The firm remained in family ownership until 1943 when it was bought out by a company from Kidderminster (CMC Ltd).

1898 Donegal was one of four factories set up by Scottish textile manufacturer Alexander Morton. At the time he boasted that he could produce hand-made carpets at a very competitive price because labour was so cheap there. In 1910 the factory employed more than 500 people. Later Killybegs, the only factory to survive after the first world war, was sold in 1957 to a consortium called Donegal Carpets Ltd. With a greatly reduced workforce it continued operating until the late 1980s. Some of the largest carpets in the world come from Donegal Carpets. They are hand-knotted in the Turkish style and were supplied to Dublin Castle, Eltham Palace, The Royal Pavilion, The Vatican, The White House, and 10 Downing St. etc. The 1980s recession forced it to close but it reopened in 1994 by the Killybegs Enterprise Group. Donegal Carpets is the only hand-knotted carpet producer still in existence in either Ireland or Britain and still creates exclusive bespoke carpets in the original factory at Killybegs. The Killybegs International Carpet Making & Fishing Centre is situated within what was once the famous Killybegs Carpet Factory and the Heritage Centre is home to the largest hand-knotted loom in the world.

20th Century

1900s Until about this time the printed carpet was produced only as a tapestry (with an uncut pile), but then cut pile carpets were introduced and marketed in considerable quantities. This velvet pile type was made from wool, whereas the traditional tapestry carpet was made from long fibre worsted yarns, normally using only five or six ounces of expensive worsted yarn per square yard. The carpet produced was cheap, but worsted yarn made a more serviceable and reasonably hardwearing product. The woollen cut pile required more surface material. These woollen and worsted carpets were hardwearing, the yarns were not vat dyed but superficially printed with no boiling being involved.

1900 Templeton's factory caught fire as the workers were finishing for the day, trapping almost every

worker, most being burnt alive.

- 1900s** Rev. Julius Arthur Nieuwland (1878-1936) Invented the first synthetic rubber neoprene.
- 1901-1910** Reign of King Edward VII
The population of the United Kingdom had reached 41.5 million with 20% living in poverty.
- 1901** Glyptal polyesters were first produced by heating glycerol and phthalic anhydride.
- 1904** The Children's Act officially banned employment of children between 9pm and 6am.
- 1905** Brintons introduced and produced carpets on the first power driven wide loom, some 15 ft wide. The use of the Scotch or Kidder carpets was extended, and latterly, when the demand for carpeting had ceased, the fabric continued to be sold in the form of seamless carpets or "Art Squares". "Ingrain" was the name given to the fabric in America.
- 1908** Blackwood Morton & Sons. By 1918 they produced reversible wool-rugs and Chenille Axminster. They became so popular that the company concentrated all efforts to produce only Chenille and Spool Axminster Carpets. Before WWII they were selling 5,000 carpets, 12,000 rugs and 20,000 yards of piece-goods every week. Robert Morton became a director in 1930.
- 1910-1936** Reign of King George V
- 1914-18** WWI. Work diversified for the war effort. Crossley's produced webbing, blankets and khaki yarn. Machine shops were turned over to shell production. Alexander Morton & Co. produced service blankets to help the war effort.
- 1918** Women allowed the vote (8.4 million), but only those aged over 30 and home owners.
- 1918** Donald Fletcher Holmes (1910-1980) and William Hanford invented the process for making polyurethane. Early polyurethane was produced by the reaction of di-isocyanates with polyester and polyesteramides. The process Holmes invented reacts polyols and related hydroxyl compounds with di-isocyanates. This method is the basis today for the manufacture of all polyurethanes.
- 1925** Harry Dutfield (1908-1999), born in Glasgow, the son of a carpet designer who, at the age of 17, helped his father perfect a reversible carpet on a handmade loom in the family attic. He was rewarded with £5. This enthused him to make more carpet and he opened his first premises a couple of years later in Kidderminster.
- 1929** Harry Dutfield went into partnership with Stephen Quayle, started as Dutfield and Quayle. In 1931 they switched to the gripper loom. Beset by the aftermath of the Depression and Union problems in Kidderminster, Dutfield went by train to the Motor Show in London in 1935 where he purchased his first Jaguar car for £299 and by chance shared a carriage with a West Country Parson who told him of the plight of the Axminster factory. Dutfield, conscious of the proximity of Axminster to the fishing waters of Lyme Bay, as well as its distance from Kidderminster, resolved to relocate and revive the town's historic industry.
- 1928** Women over the age of 21 allowed to vote under the second Representation of the People Act. Emmeline Pankhurst (1858-1928) died just 18 days before equal voting rights were granted.
- 1930** Decline in Tapestry carpet in favour of Gripper Axminster, especially for "Seamless Squares". The introduction of a completely new method of making carpets was adapted from looms designed to make candlewick bedspreads in the cotton country of Georgia, during the 1930's. These new tufted carpets, as they became known, were produced more quickly, with less raw material and lower labour costs than Axminster or Wiltons.
- 1930** Crossley Carpets. With the poor trading conditions and employment, Frank Lee brought in a warp mercerising plant with the hosiery trade in mind. This proved successful until mercerised cotton was supplanted by Nylon after WWII. In 1970 Patrick Crossley retired as Chairman and the headquarters moved to Kidderminster.
- 1935** Wallace Carothers (1896-1937), an American chemist working as director of Du Pont's research centre, discovered a miracle fibre known as Nylon 6. The basic building block contained 6 carbon atoms; 6.6 has two different building blocks each having six carbon atoms. Nylon, the first man-made fibre, was patented, but sadly Carothers committed suicide in 1937.
- 1936** Reign of King Edward VIII

1937-1952 Reign of King George VI

1937 Dutfield moved to Axminster in 1936 and the Axminster Factory recommences Carpet production. Dutfield set up the factory with two friends from Kidderminster, Norman Humphries and Jim Wright. The funding for machinery of £15,000 came from the goodwill of local businessmen and the latest models of two gripper Axminster type looms were the first to be installed. In 1938 Harry's father became Chief designer. The first carpet for 102 years was made in May (Coronation Day) and put in a local shop window of WG Potter's furniture store. Twelve narrow looms were in operation with about 35 employees.

1938 Nylon was commercially produced to sew parachute fabric and women's stockings. First nylons were shown at the San Francisco Exhibition, and the first nylon product was a toothbrush.

1939-1944 WWII and factories were again re-utilised for the war effort. The Axminster factory turned out stirrup pumps and aircraft engine parts for Vickers Armstrong and Rolls Royce amongst others. Harry Dutfield became an officer in the Home Guard. Crossley's carpet production went on after 1939, mainly for export. Webbing was again produced by them and engineering shops extended to produce equipment for the RAF and torpedo motors for the Royal Navy with a lot of work being sub-contracted to local machine tool firms. The Henry Widnell & Stewart Ltd. Lasswade site was used to make cotton cloth for the army, the Roslin site as a food store, and Eskbank site used to produce Ever-Ready batteries. Blackwood Morton & Sons manufacturers initially produced service blankets for the army and between 1939 and 1945 produced 19 different items for the armed forces. These ranged from 20mm ammunition Oerlikon shells, to F.Q. RAM Coils, and the salvage and repair of radio interference suppressors. The Wilton factory produced camouflage kitbags and tarpaulins. J H Shand's engineers shared factory space with Axminster carpets.

The term "Imperial Axminster" was used during and after World War II and specific qualities were known to the trade as A0, A1, A2 etc., but the Restrictive Practices Court, in its wisdom, saw fit to decree the qualities and prices were illegal. The Beauvais Tapestry factory in France was destroyed.

1940s 1001 All-purpose cleaning fluid launched with tag line "1001 uses around the home." This included the cleaning of carpets!

1941 John Rex Whinfield and James Tennant Dickson invented Polyester (PET) made by mixing ethylene glycol and terephthalate acid (Plastic).

With Jute in short supply after the war, backing material was replaced with twisted cardboard.

1946 Widnells were busy in the years between the wars making printed carpets and plain Wilton carpets on tapestry looms. Eskbank was rebuilt and became a Spool Axminster works and 12 ft wide looms were imported from the USA to augment the plant. The company continued to operate and survived a phenomenal spiral of wool prices in 1951 and a severe economic recession of the carpet trade in 1952. In 1957 trade improved but the company then suffered two further setbacks. Export sales of Tapestry carpets came to an abrupt end and this included the Australian business which had been very substantial. Worst of all a flood of Belgian cotton carpets at prices below the cost of the raw materials in this country finally killed large scale demand for tapestry carpet. This had not been anticipated and unfortunately matters became worse by yet another credit squeeze imposed on the industry by the Government in another attempt to resolve the Balance of Payments problem. As a result Tapestry carpet production was greatly reduced and with it many jobs. Widnells became the last tapestry carpet manufacturer in Britain and probably in the world, having been the first. They however survived and emerged from the crises with a well-known Axminster quality, an A1 all wool carpet known as "Muirfield".

1946 Stoddards employ Robert McLean (having been a partner in Templetons in 1933). He became Chairman and the organization increased with the purchase of a woollen spinning mill in 1947: Douglas Rayburn & Co Ltd., Stewarts Spinners (Galashiels) Ltd., the spinning mills at Kilmarnock and Galashiels Supply. Not only were surface yarns purchased and used by Stoddards, but the supply of yarn to other manufacturers, as well as weavers in Scottish tweed and hosiery trades. Each year these mills processed the wool of over 2 million sheep. A lot of floral chintz carpeting was shipped to

Australia until production started in Australia and a heavy tax was put on imports. Robert McLean was knighted in 1955 for his services to industry.

1947 First nylon carpet produced.

Blackwood Morton & Sons bought another factory at Finaghy, Belfast, to produce Chenille Axminster carpets. They expanded further over the next 20 years and in 1948 they purchased the Victoria Spinning Company Ltd. Dundee, in 1959 the Riverside Mills factory was built in Kilmarnock and in 1966 another factory was built which was specifically for tufted carpet production.

1949 Sergi Rudenko, a Russian archaeologist, uncovered evidence of burial mounds in the Altai mountains of southern Siberia. Altai nomads had put Chinese mirrors and silk in the mounds which had been frozen and preserved in ice. He also discovered in one tomb the Pazyryk carpet, the oldest known carpet in the world, made 500 years BC. It has all the characteristics of a modern Persian or Anatolian carpet with a pile and symmetrical (Ghiordes) knot. Woven with natural fibres and dyed using natural dyes from insects and plants, the design is full of animals and figures. The rug is on display at the Hermitage Museum, St Petersburg.

1950 The British Wool Act. Farmers trying to sell wool on the open market after the war found it chaotic and discriminatory. Anyone with four or more sheep had to be registered.

1950 Harry Dutfield purchases a run-down spinning mill in Buckfast, Dartmoor, and transformed it into a woollen spinning mill to supply Axminster to become the complete 'fleece to floor' carpet maker. The mill on the River Dart came with fishing rights much to Dutfield's delight.

1950 Machine-made Axminster Looms replace hand-knotting.

1950s The tufted carpet industry experienced a meteoric rise again as new raw materials became available in increasing quantity, although wool became very expensive. During this period the world saw more synthetic materials being developed and used.

DuPont, Monsanto, Allied and BASF became the big 4 in the development of fibre technology, making 20% of the fibre used at textile mills from Acrylic, with the added offshoot of nylon which had wool like qualities. Polyester was attracting new interest. The Calico Printers Assoc. in Britain, JT Dickson and JR Whinfield, produced fibre by condensation polymerisation of ethylene glycol with terephthalic acid. DuPont subsequently acquired the patent rights in the US and ICI for the rest of the world.

Industry turned to refining the properties of Polyester to three-dimensional hollow-core fibres. Joseph C Shivers Jr. invented Lycra, Wallace Hume Carothers (1896-1937) synthetic rubber and earlier, in 1926, Waldo L Semon (1898-1999) made PVC.

1951 The Festival of Britain

1952 - Reign of Queen Elizabeth II

1953 Crossley Carpets start a company magazine to mark their 150th anniversary. This ran throughout the 50s and 60s. During the late fifties they made the now famous Sultana Carpets.

1953 DuPont with the availability of inexpensive xylene isomers, enabled the formation of terephthalic acid through the air oxidation of the p-xylene isomer, producing polyester fibres from melt spinning, but it was not until the 1970s that these polyester fibres became commercially available.

1953 Patsy O Sherman (1930-2008) and Sam Smith working at 3M created 'Scotchgard' after a fluorochemical rubber, intended for jet fuel hoses, was spilt on an assistant's white tennis shoe. It showed resistance to water and oily liquids and everything Sherman used to try to rinse the latex out of the shoe just beaded up and ran off. Sherman and Smith took 3 years to perfect the repellent we know as Scotchgard Fabric Protector. Thirteen patents in fluorochemical polymers and polymerization were jointly held. Sherman was one of very few women chemists in 1952, when the development of Scotchgard progressed. She was required to wait for performance results outside the mill during testing due to a rule at that time that women were not allowed in the mill. Sherman and Smith at 3M introduced a stain repellent for wool, later for upholstery, carpet and clothing. By the 1960s 3M Scotchgard brought in over \$300 million annually. Eventually Sherman served as Manager of Technical Development, a company-wide responsibility, and retired in 1992.

1953 Stoddard make the carpet for Queen Elizabeth's coronation. The aisle at Westminster Abbey was 33ft

wide and so were their looms. Made in a colour called Coronation Gold, the chenille carpet was made with a very short pile so the trains from the headdresses flowed over it.

- 1957** Wiltons build a new weaving shed and the original hand looms were still in operation.
- 1958** Brintons receive the Royal Warrant supplying to Buckingham Palace and Royal households.
- 1959** Henry Widnell and Stewart Ltd. of Midlothian, established by Whytock, were taken over and became part of Stoddards and traded till 1983. In July 1961 Her Majesty the Queen and the Duke of Edinburgh toured the Bonnyrigg plant and the company's showrooms.
- 1959** New Zealand Government approached the Federation of British Carpet Manufacturers with a view to setting up in New Zealand. Buckfast Spinning (of Axminster), Tomkinsons, and Grays Carpets pooled their resources and investments, building a factory and forming Overseas Carpets (NZ) Ltd. Dufield was the driving force. He loved Marlin fishing for which he became internationally renowned - appropriately the company was named Marlin Carpets Ltd. Again encountering difficulties with trade unions, when a shop steward maintained that it was impossible for his staff to work the loom at his proposed speed, Dufield took off his jacket, sat at the loom and wove at a rate far in excess of that which he proposed. Thereafter he had no further labour problems!
- 1959** Dupont introduced BCF (bulked continuous filament).
- 1960s** Axminster installed 12' broadlooms.
- 1960** Chenille Axminster disappeared under the avalanche of tufted carpet.
- 1962** Stoddards celebrated their 100-year anniversary. By then they had merged with Navan Carpets in the Republic of Ireland and partnered with Bergoss NV with headquarters in Holland.
- 1962** Pinton Freres, Felin, France commissioned to weave Graham Sutherland's (1903-1980) tapestry, 'Christ in Majesty' for Coventry Cathedral, at that time the largest tapestry in the world.
- 1968** James Templeton & Co Ltd. Their buy-out of Grays Carpets and Textiles Ltd London, eventually brought about their demise and chenille carpets were no longer made. Templetons had grown to a multi-million company over 150 years at its peak, employing 3000 people. Later it briefly traded under the name 'British Carpets', but did not survive.
- 1969** Neil Armstrong's "one small step for mankind" was in 25 layers of man-made materials and the flag he planted was nylon.
- 1970-1995** Woven Carpet production declined by 70%, tufted production increased by 300% (UK).
- 1970-1987** Wilton ownership changed to Youghal then Coats Viyella, acquired by Carpets International until a management buy out in 1995 forming the Wilton Carpet Factory Ltd.
- 1976** Harry Dufield while in New Zealand worked with Dr F W Dry of Massey University who was developing a heavy-fleeced strain of sheep called Drysdale. He imported 30 Drysdale ewes and two rams from New Zealand. He supplied carpet to Winsor Castle after the fire, (the originals made by Samuel Ramson Whitty, for King George IV), and Osborn House. In 1997 he was awarded an MBE and died in 1999. The circular carpet of the Royal Albert Hall was completed in 1999. His son Simon, having joined Axminster in 1964, continued to develop the family firm and Harry's grandson Josh later joined him and Axminster carpets from Axminster carried on till 2016.
- 1980s** Blackwood Morton & Sons produced Axminster, wire Wilton and tufted carpets as well as underfelt. After financial difficulties in 1981 they were taken over by John Lindsay Logue in 1982.
- 1983** Stoddard & Co., purchase the James Templeton & Co. name and built a new factory in Elderslie. Stoddard made carpets for Cunard liners including the QE2, Titanic and Concorde as well as Queen Elizabeth's wedding in Westminster Abbey, the Palace of Holyrood House, Unilever House in Sydney, Saddlers Hall, RMS Windsor Castle, Gleneagles Luxury Hotel, and Liberty's. One example of Stoddard work is a round carpet, that can be seen in the drawing room in Culzean Castle, Ayrshire.
- 1987** Crossley, after 6 generations, the carpet manufacture at Dean Clough came to an end. Crossley carpets graced the floors of the Royal Opera House, Covent Garden, Buckingham Palace, Central Criminal court at the Old Bailey and Christiansborg Palace in Copenhagen, Denmark.
- 1991** Adam Carpets launch Fine Worcester Twist. In 1997 they introduce Kasbash Twist. In 2016 they celebrate the 25th anniversary of their iconic twist range.

- 1992** Blackwood Morton & Sons trading as BMK Ltd were acquired by Stoddard Carpets Ltd.
- 1993** Britons first advertising campaign. Vivienne Westwood designs a series of iconic carpet dresses.
- 1995** The Wilton Carpet Factory Ltd. formed after buyout of Wilton.
- 1995** Fully patterned tufted carpets produced in England by Ryalux Carpets (1970-2018). Individual coloured yarns presented to substrate effectively for the first time. Patterned tufted carpet rivalled both woven Gripper Axminster and Figured Wilton carpets.

21st Century

- 2000** Wooden floors and underfloor heating became popular, carpets less so. Identifying the need to move with the changing demands of the consumer, the carpet manufacturers across the world offer a huge variety of diverse carpet ranges. 1000's of textures, colours, designs and styles leave no stone unturned.
- 2005** To celebrate 250 years of Axminster a commemorative rug was produced and paraded through the town by the company's weavers. The rug is now in Clarence House, home of Prince Charles.
- 2011** The Carlyle Group acquire Brintons after 228 years of trading whose later accounts show earnings after tax had soared 81 per cent to £14.5 million in the 12 months to October 2016. In **2016** they had invested £1.6m in new high-speed loom and robotic creeling. Brintons was acquired from the Carlyle Group by Argand Partners in 2017. They made carpets in the UK as well as Poland, Portugal and India, employing around 1,800 staff until 2017 when they axed jobs at the Kidderminster factory leaving a workforce of just 53. Brintons have one of the world's biggest commercial design archives and historical pattern libraries in the industry, dating back to the 1700s, featuring thousands of original hand painted designs, papers from the Baroque to Art Deco and up to modern contemporary designs.
- 2012** The Museum of Carpet opened in Kidderminster. The Carpet Museum Trust was founded by Richard Pugh-Cook and his cousin Ken Tomkinson from three generations of the Tomkinson carpet business. That business was sold in 1998 and acquired by Gaskell plc. in 2005, before going into receivership and being rescued by Headlam plc. The National Carpet Cleaners Association (NCCA) is now based at the Museum of Carpet.
- 2012** Axminster was awarded the Royal Warrant.
- 2013** Axminster Carpets Ltd had to sell some of the assets purchased by ACL(2013)Ltd. 300 jobs lost, 100 saved including all at Buckfast Spinning Mill.
- 2014** Craigie Stockwell, Aylesbury, Manufacturer of woven or tufted carpets and rugs provided historic reproductions such as the Brighton Pavilion Carpet. A fragment of the original is in the V&A.
- 2016** Axminster. After 79 years of Dutfield's at Axminster, Simon Dutfield died. He had sold to H Dawson Wool of Bradford a controlling interest in the business who brought in a largely new management team that still carry on the business today.
- 2019** Axminster Heritage Centre which opened in 1982 has now been extended.

The above information has been compiled through on line research and publications. The reader is advised to check for more information to suit their interest.