SOUTH-EAST ENGLAND

Additional site
BUCKINGHAMSHIRE
WOOBURN
One of a group of mills on the River Wye was probably a gunpowder mill operated in the late 17th century by Sir Polycarpus Wharton, who also operated at SEWARDSTONE in Middlesex and CHILWORTH in Surrey (Fairclough 1985; Crocker & Fairclough 1998, 27; GMSG Newsletter 5 (Feb 1989), p.8; 6 (August 1989), p.10; 11 (Sept 1992), p.15).

ESSEX
Gunpowder was made in the Lea valley at tidal mills near the Thames in the late 16th century but the area did not become an important centre of the industry until the ending of the gunpowder monopoly in 1641. Most of the mills closed in the course of the 17th century. However the industry continued into the early 18th century at Sewardstone while the Waltham Abbey mills became a government establishment and played a prominent part in the gunpowder industry until the Second World War. In the following entries the early mills, with the exception of Waltham Abbey, are grouped together under the heading 'Lea Valley'.

Additional site
KYNOCHTOWN (TQ 75 83)
Black powder produced 1897-1920 under new licence no.176 (Patterson 1986, 13).

Lea Valley
Much of the following information on the early Lea valley mills is contained only in primary sources. However some of the sites are discussed in an article on the Waltham Abbey mills (Fairclough 1985).

Additions 2005-
Work by Keith Fairclough has been published on the Lea valley mills (1992), on the powdermaker John Samyne (1990), and on individual sites (see below).

ENFIELD (TQ 362 955) and ENFIELD LOCK (TQ 374 991)
The site of the Enfield mills is assumed to be that of a modern flour mill. That of Enfield Lock was near the mouth of the former Enfield Mills millstream which now forms part of the Lea Navigation. There are no remains on the latter site.

Chronology
1653 Both mills may have been producing gunpowder.
1665 Thomas Carter at both mills (January).
1668 Carter's will and inventory make no mention of the mills.
1671 Enfield Mill converted to leather manufacture.

ENFIELD, NAKED HALL MILL (TQ 374 993 ?)
The location is unknown but it is guessed that these were the mills shown on Seller's map of Middlesex, 1679(?), on a site which is now wasteland.

Chronology
1665 John Lucas (probably April onwards).
1673 John Lucas (definitely in August).
1685 Mills were the property of John Freeman who left them in his will to Polycarpus Wharton. Thereafter nothing is known.

ENFIELD, OTHER (?)
In 1697 there is a reference to a meadow in Wild Marsh, near 'ye powder-mills'.

Additions 2005-
Paper on temporary sites in Enfield (Fairclough 1996a).

HACKNEY and CLAPTON
Records exist of the following three mills whose sites are unknown.

Chronology
1652 Two gunpowder houses and a gunpowder mill on west side of lane from Humberton Street to Old Ford, occupied by William Hobley.
1669 Worrall brothers powder works in Hackney.
1687 Sir Polycarpus Wharton making gunpowder at Clapton.

LEYTON. TEMPLE MILLS (approximately TQ 376 854)
The site is possibly covered by present day sports facilities. The powder mills operated until the late 1680s and after 1690 were converted for grinding dyewoods. At some date after the Restoration, Prince Rupert was boring cannon on the site.

Chronology
1641-49 John Berisford.
1649-68 Boreman and Josias Dewey; seems to have fallen into disrepair by 1663.
1668-75 John Samine (Samyne).
1687-89 Monsieur de Pain, a French Protestant refugee.
1689 Powder mills blew up, killing seven.

Additions 2005-

SEWARDSTONE (TQ 373 963)
The site is now beneath King George's Reservoir. The powder mills operated from the 1640s until approximately 1715-20 (Fairclough 1985).

Chronology
1640s John Berrisford.
1651 John Freeman (probably by July 1651, certainly by October 1652).
1684 Mills left by John Freeman the younger to Polycarpus Wharton.
1700s Edward Gibbon tenant.
1709 Edward Parre.
1715-20 Probably converted to other use.

Additions 2005-
1708 and 1713 inventories provide evidence for the installation of edge runner incorporating mills in the late 17th century (Crocker & Fairclough 1998, 27-8, 32-4).
STRATFORD, ST THOMAS MILLS (TQ 379 835 ?)
The exact location is unknown but was probably adjoining the present day Pudding Mill Lane. Gunpowder was being produced in 1597 and in 1622 (Fairclough 1985).

STRATFORD, THREE MILLS (TQ 383 829)
The site was that of the present-day Three Mills complex. Gunpowder was definitely produced in 1588-9 (Fairclough 1985).

Additions 2005-

STRATFORD, OTHER
Another mill in Stratford, owned by Bridge House, was making powder in 1613.

TOTTENHAM (TQ 348 896)
The site was on the east bank of the present-day Lea Navigation and has been built over. Gunpowder was made in the third quarter of the 17th century but the mills were making paper by 1680.

Chronology
1656 Powder mill operating.
1665-9 Thomas and John Worrall powder makers.
By 1680 Paper mill.

WALTHAMSTOW (TQ 351 883 ?)
The site was possibly that of the present day British Waterways Board warehouse (the old copper mills building). John Samyne was probably producing gunpowder there from the early 1650s until his death in 1676 and he may have built an additional mill on the site. The mills were converted to papermaking in about 1690.

Chronology
1659 John Samyne definitely producing gunpowder.
1687 John Samyne's son producing gunpowder.
c.1690 Became a paper mill.

WALTHAM ABBEY (TL 38 01)
[Major changes: see below.]
On the River Lea, close to the town of Waltham Abbey. The site is now occupied by the Royal Armament Research and Development Establishment (RARDE) and access is strictly controlled for reasons of national security. Many buildings of the former factory survive and are occupied by the present research establishment. A collection of historical material is held by the establishment's library.

The history of the factory is well documented, particularly during the period of government ownership from 1787 onwards, and there are several published accounts (Simmons 1963; McLaren 1975; Fairclough 1985).

The date at which gunpowder manufacture started on the site has been disputed. It has been claimed that the mills were operating in 1561 and in the 1640s on the basis of evidence which does not however mention the site specifically. Recent research indicates that the
manufacture did not start until 1665, probably the year in which a former oil mill was converted for gunpowder manufacture (Fairclough 1985).

The black powder mills continued to operate until they were destroyed by enemy action in the Second World War. Experimental production of guncotton was carried out in the 1860s and the factory was later extended in order to produce modern propellants.

Chronology
1665- Hudson family: Ralph, Peter (Fairclough 1985).
1702-87 Walton family: William, Philippa, John, Thomas, Bourchier, James (West 1986).
1787-1945 Royal Gunpowder Factory.
1940-1 Black powder production ceased.
1945 Royal Gunpowder Factory formally closed.

Additions 2005-
Explosion reports in The Times, 1790-1850
1801: 21 April, 3b; 24 June, 3a (Waltham, 13 injured).
1811: 28 November, 2e; 2 December, 3c. (8 killed.)

Explosives Inspectorate reports in Parliamentary Papers
1893, 13 December (1894, xx, 203).

The Research Establishment closed in 1991. An archaeological survey was carried out by the Royal Commission on the Historic Monuments of England (RCHME 1996; Everson & Cocroft 1996). The site was opened to the public as an interpretative heritage centre in 2001 (www.royalgunpowdermills.com).
The site was given protected status as a scheduled monument and many of its components were listed.
These developments and research findings are discussed by Cocroft (2000).

For the 18th century see also West (1991).

An account of the career of Philippa Walton is given by Fairclough (1996c).

Scheduled Monument: National Number 21567
National Monuments Record Report: NMR Number TL 30 SE 95

HAMPShIRE

Additional site

EYEWORTH (FRITHAM) (SU 42 14)
The Schultze Gunpowder Company was formed in 1868 to manufacture a propellant based on wood-pulp (Rise and progress, 409-11). Prior to the establishment of the Schultze works a lease of the site had been taken in 1859 by a Mr Drayson for black powder manufacture. There is no evidence that the scheme progressed beyond the planning stage and Drayson absconded in 1869. He was the Henry Drayson who was associated with MARESFIELD in Sussex (Pasmore 1993, 4-5; Yoward 1994).

KENT
The gunpowder industry was first established in the county at Faversham, probably in the 1650s, after the ending of the gunpowder monopoly, and there is no conclusive evidence to support claims that it started in the 16th century [see addendum under FAVERSHAM]. The Faversham Home works were the first gunpowder mills to be acquired by the Crown, Further factories were established in Kent in the 18th century at Faversham, Dartford and Tonbridge.

**DARTFORD (TQ 56 76)**

On the River Darent, a tributary of the Thames, approximately 3 km south of the centre of Dartford at Wilmington. The site, which is on private land, lies north of the A2 road and is approached by a footpath leading south from Powder Mill Lane. This is entered at the west end from Hawley Road (A225) and at the east end from Darent Road. The factory formerly covered some 50 acres of land on both banks of the river. There is a modern industrial estate west of the river and it was during further development, involving widening of the river channel, that features of the powder mills were discovered in 1983. Prompt action by the Kent Archaeological Rescue Unit and effective cooperation between the developers, the local authority and the water authority resulted in a revised scheme, which preserved some of the structures. An archaeological excavation was carried out and remains of two pairs of water powered incorporating mills were consolidated for public view. Arrangements for public access have not however been finalised (Philp 1984).

The works occupied an ancient mill site on the Manor of Bignores. The site was probably that of the first established paper mill in England which was started by John Spilman in the late 16th century. Black powder was manufactured there from 1732 until the early 20th century and guncotton and incandescent gas mantles were produced in later years (*Rise and progress*, 362). The factory was largely in decay by about 1920 (Philp 1984).

**Chronology**

- 1755-57 Pyke and Thomas Edsall, Sr and Jr. (West 1986).
- 1873 Amalgamated with Messrs Charles Laurence & Son of BATTLE, Sussex.
- 1858 Visit by Lammot du Pont (Wilkinson 1975).
- 1876 Continuing Certificate no.53.
- c.1890 Guncotton factory erected adjacent to black powder works (*Rise and progress*, 362).
- 1898 Incorporated with Curtis’s & Harvey Limited (*Rise and progress*, 362).
- 1907 Closed for black powder (Patterson 1986).
- By 1909 Incandescent gas mantles and guncotton manufactured (*Rise and progress*, 362).

**Additions 2005-**

Explosion reports in *The Times*, 1790-1850

- 1790: 1 October, 2b.
- 1791: 19 November, 2b.
- 1795: 2 January, 3a; 6 January, 4c; 13 January, 3c. (11 killed.)
- 1796: 13 August, 3b; 15 August, 4b. (4 killed.)
- 1799: 22 January, 3d (5 men and 1 boy killed).
- 1803: 21 September, 2d; 14 October, 2c.
- 1805: 17 June, 3c.
- 1833: 22 January, 2c; 23 January, 3b; 26 January, 3b; 3 March, 4c.
- 1834: 25 January, 6a.
- 1839: 12 September, 5e.
Explosives Inspectorate reports in *Parliamentary Papers*
1879, 11 March (1878-79, xvi, 393).
1885, 21 August (1886, xiv, 599).

Location given as TQ 5478 7282 (Eve 1999, 35).

For 18th century see also West (1991).


A foundry was established on part of the gunpowder site in the 1920s and the area was the subject of an archaeological investigation prior to redevelopment (Barber 1999).

**Faversham**
[Major changes: see below and www.Faversham.org].

A detailed account of the Faversham mills has been published by the Faversham Society and this forms the basis of the following summary (Percival 1967). There were three black powder factories in the town of which the earliest, the Home Works, was definitely in operation by 1653. The business expanded in the early 18th century and the second factory, the Oare Works, was operating by 1719. The Home Works became the Royal Gunpowder Factory in 1760. Following an explosion in 1781 the Marsh Works was built farther from the town to house the more dangerous processes. The government let and then sold its Faversham works after the Napoleonic wars.

The first guncotton (nitrocellulose) factory in the world was opened at the Marsh Works in 1846 but closed after a serious accident the following year. In the late 19th century high explosives factories were built north and north-north-west of the town at Harty Ferry and Uplees. These closed at the end of the First World War but a smaller high explosives factory, the Abbey Works, opened in 1924 closer to the town, alongside the Creek. This remains in operation, with most of its original buildings, but now produces CO₂ cartridge charges [see addendum]. Black powder was made at the Oare and Marsh works until 1934 when ICI transferred the manufacture to **ARDEER** in Scotland.

Faversham has the only restored incorporating mill in Britain [see addendum] and this is thought to be the oldest surviving example in the world. The museum of the town's history at the Fleur de Lis Heritage Centre contains displays on the local explosives industries.

**Additions 2005–**

**Explosion reports in The Times, 1790-1850**
1791: 24 March, 3b (horse mill).
1793: 27 February, 3b (3 killed).
1795: 19 January, 4b (Pigou & Andrews)
1802: 11 September, 3d (5 killed).
1807: 21 September, 3a (6 killed).
1810: 18 January, 3a (King's Mills, 4 killed, others injured).
1811: 6 March, 2e (Ospringe).
1821: 22 March, 3e (Oare, 3 killed).
1838: 13 October, 4f (Ospringe); 9 November, 5b (Hall's).
1839: 10 May, 3f (Hall's); 27 July, 7a (Hall's).
1847: 16 July, 6b; 19 July, 5e; 10 August, 6d. (Many killed and injured).
1848: 1 August, 5f (Hall's guncotton factory).
1849: 1 January, 8a.
1850: 11 October, 4f (Hall's).

Explosives Inspectorate reports in Parliamentary Papers
1878, 12 February, Cotton Powder Company (1878, xxi, 685).
1879, 21 February, Hall's factory (1878-79, xvi, 405).
1879, 16 May, Cotton Powder Company (1878-79, xvi, 367).
1880, 11 December, Marsh Works (1881, xxiv, 197).
1904, 2 February (1904 Cd.2033 viii.613).


Thomas Gyll, gunpowder maker at Faversham, recorded in muster roll of 1573 (Kent Archives Office FA CPM 3 fol.3 rev.).

Information provided by Arthur Percival:
Abbey Works: The product, CO₂ cartridge charges, is used in mining and quarrying (Taylor & Gay 1958, 123-44). Remaining at the Works, and still in limited use, is a manumotive railway of the kind used in many conventional explosives factories.

Faversham now has the only two restored incorporating mills in Britain. One, thought to be the oldest in the world, is at Chart Mills at the former HOME WORKS. The other, of 1926, is at the OARE WORKS.

The Fleur de Lis Heritage Centre features a display and 10-minute film.

The Home and Oare works are scheduled monuments and a large number of structures have been listed.

HOME WORKS (TR 01 61)
The mills were on a linear site on the Westbrook, on the west edge of the medieval town centre, between TR 004 610 and TR 013 616. There was a series of mill ponds, the highest of which had served a monastic corn mill in the Middle Ages. The water supply has been greatly reduced by abstraction, the mill ponds have been filled in [see addendum] and most of the land has been used for housing development.

However at Chart Mills (TR 010 614) one surviving incorporating mill of c.1760 has been restored by the Faversham Society and the foundations and stone beds of three others have been excavated, consolidated and exposed. It is planned to restore the mill to full working order. Other surviving features include a 17th century charcoal burner's house in Lower Road, near the site of the top mill pond, and the beds of several mills at the lower end of the site near the tidal creek. There are also houses and school buildings which had associations with the factory (information from Arthur Percival).

Chronology
By 1653 Daniel Judd.
By 1740 Thomas Pearse (West 1986).
By 1755 Benjamin Pryce (West 1986).
1760- Royal Gunpowder Factory (purchased 1759) (West 1986).
1815- John Hall (leased 1815-, purchased 1825).
1876 Continuing Certificate no. 39.
1898 Incorporated with Curtis's & Harvey Limited.
1918- Explosives Trades, Nobel, ICI.
1934 Closed.

Additions 2005-
1678 and 1753 inventories, with historical introductions, published (Crocker et al 2000). Daniel Judd at Ospringe by 1650.

For 18th century see also West (1991).

All but one of the mill ponds (Stonebridge Pond, the largest) have been filled in (information from Arthur Percival).

A substantial leaflet covering the Home Works, entitled ‘Gunpowder trail: a guide to Faversham's explosive past!', is available from the Fleur-de-Lis Heritage Centre.

Scheduled Monument:
National Monument Number 31401
National Monuments Record Report: NMR Number TR 06 SW 45; Unique Identifier 463699
Chart Mills, located within the Home Works, has a separate NMR Number TR 06 SW 229 and Unique Identifier 1231028.

MARSH WORKS (TR 01 63)
The works occupied a site with a frontage to Oare Creek, covering the area between TR 013 624, 012 632, 012 627 and 017 628. The site is now very flat and it is not clear how water power could have been available, although it is thought that some was used. Most processes were probably powered by horses or steam engines, and latterly by electricity. The manufacturing site has been worked out by gravel extraction and is privately owned. Public access is not encouraged because of danger from wet pits. Some administrative and service buildings are in current industrial use. These include the gatekeeper's house and other cottages, offices and stores near the Ham Road entrance and the saltpetre store and refinery [see addendum] alongside the dock (information from Arthur Percival).

Chronology
1786 Opened as extension to Royal Gunpowder Factory.
1832-John Hall & Son (leased 1832, purchased 1854).
1846 Guncotton factory built.
1847 Guncotton factory closed after explosion.
1876 Continuing Certificate no.38.
1898 Incorporated with Curtis's & Harvey Limited.
1918- Explosives Trades, Nobel, ICI.
1934 Closed.

Additions 2005-
An account of the Oare and Marsh factories has been published by the Faversham Society (Patterson 1995a).

The saltpetre refinery building has now gone (information from Arthur Percival).

**OARE WORKS (TR 00 62)**

[Major changes: see below.]

The mills were in the parish of Davington, on a linear site between TR 003 622 and TR 006 626, along a stream which rose within the factory at the south-west end. The south-east end has been destroyed by gravel working and most of the leat system is now dry but there are interesting remains to the left of the track running north from Bysing Wood Road to Oare Road. The land is private but there are no gates. Features include mid-19th century tinshops, partly derelict, a cooperage building, the site of the proof range marked by a row of *Wellmingtonias*, remains of corning and glazing houses and slight remnants of the water wheel of an incorporating mill. Construction is due to start shortly of the Western Link Road which will follow the track from the north end and then deviate slightly east of it (information from Arthur Percival).

**Chronology**

Early 18th century Francis Grueber (West 1986).
1730-43 Francis Grueber Jr (West 1986).
1745-60 Richard Chauncy and Thomas Vigne (West 1986).
1761-2 Toby Chauncy (Jan 1761 to Oct. 1762) (West 1986).
By 1768 Stephen Grueber with Pigou and Andrews (West 1986).
By 1798 Andrews & Pigou.
1812 Acquired by John Hall.
1876 Continuing Certificate no. 37.
1898 Incorporated with Curtis's & Harvey Limited.
1918- Explosives Trades, Nobel, ICI.
1934 Closed.

**Additions 2005-**
The Oare site has been surveyed and recorded (RCHME 1991).

An account of the Oare and Marsh factories has been published by the Faversham Society (Patterson 1995a).

**Chronology:** Worked by Huguenot refugees from the mid-1680s (Crocker *et al* 2000, 52).

For 18th century see also West (1991).

Following the acquisition of a 175-year lease by Swale Borough Council, conservation and restoration work was carried out in 2003-2005 by Groundwork Medway Swale. Conserved remains include glazing and corning houses and a 1926 incorporating mill has been repatriated from ARDEER. The site is open to the public, with special trails laid. In February 2005 water has been returned to the leats and canals and a visitor centre with explanatory displays is being created in the former cooperage ([www.faversham.org](http://www.faversham.org)).
Scheduled Monument National Number 31414.
National Monuments Record Report: NMR Number TR 06 SW 65; Unique Identifier 463715

MAIDSTONE (TQ 75 54)
Bridge Mill, on the River Loose, near its confluence with the Medway, was converted from a fulling mill to a gunpowder mill between 1698 and 1704. There was an explosion there in 1731. In the mid-18th century the mill became a corn mill. Later it became an oil mill and around the end of the 19th century was taken over for paper manufacture by Albert E Reed (Spain 1973, 182-3).

Additions 2005-

TONBRIDGE, LEIGH MILLS (TQ 57 47)
The site is in the parish of Leigh-next-Tonbridge, on a large mill stream fed by the River Medway, some 2 km west of Tonbridge and 1.5 km east of the village of Leigh. It is approached at its west end near a bridge at TQ 566 464. The site is on private land and is an overgrown wilderness, with remains of several wheel pits which are arranged in parallel between upper and lower mill streams. There are more substantial remains of apparently later water-powered incorporating mills with fragments of edge runners lying nearby (visited 1986)

The Leigh mills have been confused with those of TONBRIDGE, OLD FORGE (Rise and progress, 357). They were established in 1811 by members of the local Children and Burton families and are noted for their association with the scientist Sir Humphrey Davy (Hoole 1978), They were later purchased by Curtis's & Harvey. Black powder was produced for military use and later smokeless sporting powders were made, this manufacture being transferred to Tonbridge when the works at GLEN LEAN in Argyll closed down (Rise and progress, 357) The factory closed and became derelict in the 1930s (information from David Hansell).

Chronology
1859 Purchased by Curtis's & Harvey (Rise and progress, 357).
1876 Continuing Certificate no.21.
1885 New plant installed for government prismatic (Rise and progress, 357).
1897 Black powder manufacture ceased (Patterson 1986, 14).
By 1909 Smokeless sporting powder produced (Rise and progress, 357).
1918- Explosives Trades, Nobel, IC1.
1931 Still operating (ICI Magazine, June 1931).
1930s Closure.

Additions 2005-
Explosion reports in The Times, 1790-1850 (Ramburst near Tunbridge)
1828: 2 May, 3d (3 killed).
1829: 18 August, 2e (2 killed).
1835: 24 April, 3b.

The distinction between the two Tonbridge sites, confused by Edward Hasted in his
History of Kent (1797), is explained by David Hansell (1992).

A research and recording project begun by the Leigh Historical Society in 2005 is published by Rowley (2009a, 2009b).

TONBRIDGE, OLD FORGE (TQ 59 43)
In the parish of Tonbridge, 3 km south of the town near the present Old Forge Farm. The powder mills occupied an earlier ironworking site and were themselves succeeded by a corn mill (Straker 1931, 222). Some records have been wrongly attributed to TONBRIDGE, LEIGH MILLS (Rise and progress, 357).

Chronology
1771 Mills erected.
1807 Application by Thomas Hewlett to build additional mills (Maidstone Quarter Sessions, 16 July 1807).
1835 Powder mills not shown on Tonbridge tithe map.

Additions 2005-
The distinction between the two Tonbridge sites, confused by Edward Hasted in his History of Kent (1797), is explained by David Hansell (1992).

1771 Partnership formed between William Moon, carpenter, Thomas Moon, yeoman, Richard Hooker and Samuel Croft, gunpowder maker of BATTLE. Pestle mills were used.
1772 Thomas Swayne purchased one third of Croft's quarter share (ibid). Hooker, Swayne and William Moon petitioned for the right to continue using pestles (J House of Commons, 34 (1772-4), 25-6, 29, 38-9). These were in general prohibited by the Act of 11 George III, c.61, passed 22 January 1772. The exemption granted by that Act to mills in Sussex was extended to Tonbridge by the Act of 13 George III, c.13, passed 26 November 1772.
1774 Explosion (Hansell 1992).

MIDDLESEX
Early antiquaries and historians claimed ancient origins for the powder mills on Hounslow Heath. However the first mills were not built until the early 17th century and the industry did not become established in the long term until after the abolition of the gunpowder monopoly in 1641. One of the major explosives firms in the country, Curtis's & Harvey, was established at Hounslow in 1820. The Hounslow and Bedfont sites were owned by the Earls and Dukes of Northumberland from 1656 to 1871.

BEDFONT (TQ 11 75)
The powder mills occupied upper and lower mill sites on the Duke of Northumberland's River near its confluence with the River Crane. On the lower site, north and west of Baber Bridge in Staines Road, there are foundations of buildings, blast mounds, water courses and steam engine beds. This area is reached by footpaths leading north from Baber Bridge (TQ 112 745) and east from River Gardens Bridge (TQ 109 746). An archaeological excavation has been carried out on the site of water-powered and later steam-powered incorporating mills (Philo & Mills 1985)
The earliest powder mills were probably based on an earlier corn mill at the Upper site (TQ 108 746) and appear to have become a sword mill before reverting to gunpowder in the
1650s. The nearby NORTH FELTHAM mills were then added, followed by the Lower Bedfont mills, which had been manufacturing paper. The works expanded c.1800. From the 1820s onwards they operated as an annexe of Curtis's & Harvey's factory at HOUNSLOW, specialising in small arms powder (Philo & Mills 1985).

**Chronology**


- 1609+ Powder mills on Upper site (Philo & Mills 1985).
- 1654 Sword mills on Upper site (set up 1630) converted to gunpowder.
- 1655-68 Thomas Carter.
- 1668 Thomas Groves, relative of Thomas Carter.
- By 1673 Richardson family; Robert, John.
- 1690 Lower mills (paper) acquired and converted to gunpowder (Philo & Mills 1985).
- 1704 Elizabeth Richardson, widow of John.
- 1704-10 Mr Bosseville.
- By 1725 John Barnard & Nicholas Godshall.
- 1746- John Barnard & James Underhill.
- By 1755-61 Samuel Underhill.
- 1761-1831 Tayler family: Richard Tayler & Heneage Legge (1789 lease); Richard, son of Richard (1792-); Taylor, Gardner Co (by 1801).
- 1830-31 Richard Tayler sole proprietor.
- By 1833 Leased to Curtis's & Harvey.
- 1918- Explosives Trades, Nobel.
- 1926 ICI, formal closure.

**Additions 2005-**

**Additional site**

**FULHAM**

Operated by the Huguenot Azire family in the late 17th century (Fairclough 1997).

**HOUNSLOW (TQ 13 73)**

The site, which is on the River Crane, is now occupied by Crane Park, which is open to the public. It is entered in Hounslow Road 3 km south-west of Hounslow (TQ 125 732). The ground has been landscaped but blast mounds and a few foundations of buildings can be identified. There is a tower that is locally known as the 'shot tower' and is connected in popular imagination with the gunpowder industry. Some of the watercourses form an island, which is managed as a nature reserve. A study of the history of the site was prepared for this project (Over 1984).

**Chronology**

- 1757 Edmund and John Smyth (West 1986).
- 1758 Edmund and John Smyth and Edmund Hill (West 1986).
- 1760 John Smyth and Edmund Hill (West 1986).
- 1763-1800 Edmund Hill.
- 1812-13 John Butts.
- 1819-20 Harvey & Grueber.
- 1820 Firm of Curtis's & Harvey established at Hounslow (Reader 1970; *Rise and progress*, 355-7).
Additions 2005-

Explosion reports in The Times, 1790-1850

1792: 2 August, 6d.
1796: 25 January, 2b; 26 January, 3d; 29 January, 4c; (4 killed); 1 August, 3b (4 killed); 8 August, 2b (Hatton, near Hounslow); 19 November, 2d (5 killed).
1798: 9 February, 2c.
1800: 10 June, 2d (3 powder mills); 16 August, 3d; 19 August, 3c (Hatton, 2 killed).
1800 Twickenham Common: 15 June, 3a (4 killed); 22 June, 3a (3 killed).
1810: 22 February, 3d (4 killed).
1811: 9 September, 3b (2 killed).
1812: 6 July, 3b; 31 August, 2; (2 injured).
1813: 16 February, 3c; 23 August, 3c (3 killed).
1816: 25 July, 3c (1 killed, others injured).
1825: 21 October, 2f (Hatton, 1 killed).
1826: 27 July, 3b (1 killed, others injured).
1827: 24 August, 3f; 29 August, 3d.
1829: 11 June, 2f; 12 June, 3f; (2 killed).
1835: 3 August, 2d (2 killed).
1839: 28 December, 5f (1 killed).
1842: 21 February, 6c; 2 March, 6c; (2 killed).
1850: 12 March, 8b; 13 March, 8b; 14 March, 5d; 19 March, 4e; 20 July, 6e.

Explosives Inspectorate reports in Parliamentary Papers

1887, 3 May (1887, xvii, 365).

For the 18th century see also West (1991).

A detail concerning the late installation of pestle mills is discussed by Crocker & Fairclough (1998, 30-1).

NORTH FELTHAM (TQ 11 74)

On the River Crane a short distance south of the BEDFONT site. Access is by a footpath leading south along the west bank of the river from Baber Bridge on the Staines Road (TQ 112 745).

Gunpowder was made from the mid-17th to the mid-18th century by the proprietors of the Bedfont mills. The mills were then converted to other industrial uses. They were later acquired by Curtis's & Harvey and reverted to explosives manufacture as a cartridge factory. A water turbine survives from the later period. The following chronology is based on Over (1984) and information provided by Phil Philo.

Chronology

1668-1752 Powder mills under same ownership as BEDFONT.
1752 Converted to copper, brazil, snuff mills etc.
1871 Acquired by Curtis's & Harvey.
1895 North Feltham Cartridge Factory.
1918 Explosives Trades.
1920 Closed.

**STANWELL (TQ 03 74)**
There was a powder mill on the River Colne c.500 m south-west of Hithermoor Farm, in the late 18th and part of the 19th century. Between 1832 and 1844 it was acquired by Curtis's & Harvey who had already been working it for some years. It was later converted to a snuff mill and became a corn mill around the end of the 19th century. This burned down in 1925 (VCH Middlesex, 3, 43).

**Chronology**
By 1791 Edmund Hill
After 1832 Acquired by Curtis's & Harvey
By 1896 Snuff mill

**Additions 2005-**
In the administrative county of Surrey since 1965 and therefore included by Crocker & Crocker (1990, 145).

**SURREY**
The earliest known water powered gunpowder mill in England was a tidal mill at Rotherhithe in the historic county of Surrey, and Surrey makers dominated the industry in the late 16th century and during the operation of the gunpowder monopoly up to 1641. The industry operated in the county until 1854 at Tolworth, c.1875 at Ewell and until 1920 at Chilworth. The early history of the industry is discussed in some detail in the Victoria County History of Surrey, 2, 306-329.

**Additions 2005-**

**ABINGER (TQ 11 47)**
The site of Abinger or Elwix mill is on the Tillingbourne, 2 km east-south-east of the village of Abinger Hammer. Remains of a water wheel pit now form a feature in the garden of a dwelling house.

The powder mill was probably operated by Richard Hill, gentleman of Shere, and one time lord of the manor of Abinger, who was a partner with the Evelyns of TOLWORTH in their patent of 1589, but operated independently. Powder making ceased in the 17th century (Brandon 1984).

**Chronology**
1589 Richard Hill co-patentee with George and John Evelyn (VCH Surrey, 2, 312).
1595 Mill leased to George Bromell for making gunpowder.
1622 Reference to a powder bay at Elwix mill; partly converted to a copper mill.
By 1667 Corn mill and copper mill on the site.

**ABINGER HAMMER (TQ 10 47)**
Gunpowder manufacturing buildings including a cylinder house, saltpetre earth and boiling houses and a proposed mill are described in sale particulars and an associated plan of c.1790s. The site was on the Evelyn estates and was in the vicinity of the forge of Abinger Hammer, which had recently ceased operating (SHC: G 53/107).
Additions 2005-
Construction was begun but licence was refused and the proprietors left to establish gunpowder mills at GOREBRIDGE, Midlothian (English & Field 1991-2).

BALHAM (TQ 29 74)
A horse-powered gunpowder mill was active at Balham House sometime between 1701 and 1723. It is suggested that it was operated by William Walton, gunpowder maker at WALTHAM ABBEY (information provided by Keith Fairclough).

Additions 2005-

CARSHALTON (TQ 28 66)
Known as Shepley Mills after an 18th century leather dresser. The site is at the confluence of the Croydon and Carshalton headwaters of the River Wandle and can be seen from a footpath along the west bank of the Carshalton stream entered from River Gardens (TQ 282 655) in the vicinity of the original mill site. This was occupied by a corn mill and probably a fulling mill in the Middle Ages followed by a dyewood mill and then a powder mill. Only water channels survive but the area over which the powder mills extended, on both sides of the confluence and on the east bank of the Croydon Wandle, has remained in industrial use to the present day. Later uses have included leather, oilseed milling, snuff milling, calico printing and engineering (Information provided by M Wilks).

Chronology
1650s William Molins, powder maker; Abel Richardson, partner; John Jarvis, partner and manager; John Pepper, chief workman; Lewis Fossan, clerk (VCH Surrey, 2, 322-4).
1653-6 John Jarvis.
1657 Thomas Fossan.
1661 Bartholomew Fossan, skinner, and Lewis Fossan, goldsmith, both of London, sold business to Josias Dewye (SHC: 212/9/3).
1692 Mills purchased by Dewye.
1698 Josias Dewye died leaving mills to his nephew John Dewye.
1703-11 John Dewye held Ordnance contracts.
? John Dewye succeeded by John Dewye Parker.
By 1740 Three mills converted to copper, fourth to dyewoods.

Additions 2005-

CHILWORTH (TQ 03 47)
On the Tillingbourne, a tributary of the River Wey, 4 km south-east of Guildford. The site extends from west of Blacksmith Lane (TQ 022 474) up the valley to Postford Pond (TQ 040 480). Public access is allowed to the central portion of the site, which is owned by Guildford Borough Council and is a Scheduled Monument. This area contains ruins of steam powered incorporating mills and many edge-runner stones. The lower end of the site contains re-used industrial and service buildings of works that can be seen from a public footpath. Remains of a late 19th century smokeless powder factory at the upper end of the site are on private land but many features can be seen from a public footpath. Little more than foundations remain of
the Admiralty cordite factory which was built during the First World War at the Postford end of the site (Crocker 1985).

An account of the history of the mills has been published (Crocker 1984), which provides the basis for the following summary. There are also two published articles (Warner 1975, 1976). The mills were on the site of an earlier corn mill, fulling mill and wire mill, and operated from the mid-1620s, when they were established by the East India Company, until 1920. They were expanded in the 17th century, in order to supply government contracts by Sir Polycarpus Whaton who was ruined and imprisoned for debt. The mills operated on a smaller scale in the 18th and much of the 19th, centuries. A major expansion started in the 1880s with the construction of plant for the manufacture of brown prismatic or 'cocoa' powder by a subsidiary of a German company. This was followed by the building of modern explosives factories in the 1890s and during the First World War.

Chronology
1626-36 East India Company (Brandon 1984).
1636 George Collins and Samuel Cordell granted monopoly.
1653-73 Vincent Randyll, owner of Chilworth Manor, proprietor; also, George Duncombe and John Woodroff (1655), Josias Dewy (1656).
c.1673 Mills visited by John Aubrey and described in his History of Surrey, 1718-19.
1677 Sir Polycarpus Wharton took a 21-year lease and extended mills.
c.1680 Lower, Middle and Upper Works on John Seller's map of Surrey.
1704 Lower Mills converted to paper making.
c.1710 Broadsheet issued: The hard case of Sir Polycarpus Wharton, baronet.
By 1716 Mr Gaubar (Grueber). Not known if mills working at this time (West 1986).
1728 Francis Grueber; Upper Works derelict.
1759 Edward Pryce first supplied the government (West 1986).
1765 Mills not in working condition (West 1986).
By 1766 Pryce and Isaac Dent.
By 1770 Pryce bankrupt. Dent alone (West 1986).
1790 Dent died leaving business to William Tinkler.
1796 Edmund Hill, powder maker of Isleworth, purchased manor; Tinkler continued as proprietor of mills.
1819-81 Sharp family: John; John & Thomas; J T & S Sharp.
1876 Continuing certificate no. 11.
1881 Sold to J Marcus Westfield.
1885 Chilworth Gunpowder Company formed as a subsidiary of Vereinigte Rheinisch-Westfälische Pulverfabriken.
1892 Smokeless powder factory built.
1915 Cordite factory built by the Admiralty.
1918 Explosives Trades 1920 Closed.

Additions 2005-
Explosion reports in The Times, 1790-1850
1810 17 January, 2d.

Explosives Inspectorate reports in Parliamentary Papers
1879, 10 February (1878-79, xvi, 377).
1883, 15 November (1884, xvii, 675).
1901, 12 February (1901 Cd.552 ix.815).
The area designated a Scheduled Monument (Surrey 177) in 1982 was extended in 1999 (SM31397/01) to cover the area of the late 19th century smokeless powder works and the First World War Admiralty Cordite Factory.

The field guide (Crocker 1985) has been revised (2 edn 1994; 3 edn 1999, 4edn 2005) and a general history of the gunpowder mills and neighbouring paper mills has been published (Crocker & Crocker 2000). Further research has been carried out on the mills in the 17th and 18th centuries (Fairclough 1996d, 1999, 2000a, 2000b; Crocker et al 2000, chs 5 & 6; Fairclough & Crocker 2005). For the 18th century see also West (1991).

A detailed survey has been carried out by English Heritage (Cocroft 2003).

In 2010 a Conservation Management Plan is being drawn up by Guildford Borough Council.

**Scheduled Monument:** National Number 31397  
**National Monuments Record Report:** NMR Number SE 88 SE 21; Unique Identifier 62694

**EAST MOLESEY LOWER (STERT) MILL (TQ 15 68) and UPPER MILL (TQ 14 68)**

On the River Mole, the lower site being 200m above the original confluence with the Thames and the upper site about 1km further upstream. Both occupied the sites of earlier corn mills. The upper site became part of a private park in the late 18th century. It is still in private grounds and only watercourses remain. Powder manufacture ceased at the lower site in the 1660s but was followed by a succession of industries up to the present day. The site is now occupied by offices and light industry (Baker 1970s). Both powder mills were established during the Commonwealth period by John Samyne, who had set up as a powder maker in 1645 and was appointed a commissioner for saltpetre in 1653. At about this time he built several new mills which probably included those at East Molesey. He acquired others at WALTHAMSTOW, LEYTON and HACKNEY in the Lea valley in Essex (Baker 1970s; Greenwood 1980).

**Chronology**

1650s John Samyne  
1666 Inhabitants petitioned the king to order removal of powder mills  
1670 John Samyne passed over the mills to his son Peter  
1676 Peter Samyne leased both mills to James Clarke, the lower mill was apparently no longer a gunpowder mill.  
early 18C Robert Stiles (186).  
by 1728 Powder mill leased to Robert Norman (West 1986).  
by 1754 Robert and James Norman (West 1986).  
1763 Susannah Norman, widow of James, (January); Susannah Norman and Thomas Sutton (March) (West 1986).  
1767 Susannah Norman married Beaumont Hotham who formed a partnership with Thomas Sutton.  
1780 Hotham and Sutton, having acquired the two Molesey manors, demolished the mill.
Additions 2005-
Transcript of 1678 inventory and historical introduction (Crocker et al 2000, 43-6.)

Paper on John Samyne (Fairclough 1990).

For 18th century see also West (1991).


EWELL (TQ 21 64)
On the Hogsmill River, north-east of the village of Ewell, between the railway line (TQ 216 632) and Ruxley Lane (TQ 205 642). The site has been landscaped to provide an open space and the river has been rechannelled. No buildings survive and only half an edge runner can be seen. Another is embedded in a garden path in Church Street. The later mill owners lived at Avenue House, now a public library known as Ewell Court, near the decorative pond on a tributary stream. After the mills closed c.1875, edge runners from the site were used at Beddington snuff mill (Sutton Library: Peatling Papers X; Mills).

The mills were active in the 18th and 19th centuries- The grant of the Rectory of Ewell to powdermakers in 1560 is probably related to the mills at TOLWORTH which were on the Hogsmill River 3 km downstream (Titford 1967, 75-6). No documentary evidence has been found for the Ewell mills before the mid 18th century. Jonathan Bade, who ran them with Alexander Bridges from 1754 onwards, supplied the government in the war of 1740-48 but there is no evidence that he was at Ewell then (West 1986).

Chronology
1754-81 Jonathan Bade and Alexander Bridges.
1781 Alexander and Robert Bridges, sons of Alexander Sr.
1798 Robert Bridges and John, sons of Alexander Sr, in trust for their nephew Henry, son of Alexander Jr.
1802 Henry Bridges (Enclosure map).
1855 Sir Henry Bridges (Simmons Collection).
c.1855 Messrs Sharpe & Company (ibid).
1862 Sharpe, Adams & Company (ibid).
1865 Messrs Sharpe & Davy (ibid).
1870 J C Sharpe & Company (ibid).
c.1875 Closed (information Nonsuch Antiquarian Society).

Additions 2005-
Explosion reports in The Times, 1790-1850
1791: 9 June, 3b (4 killed).
1827: 30 March
1844: 26 June, 7a; 30 August 6f.
1845: 27 March, 4f

Explosion 5 July 1791 (Lackington 1794, 508-9).

For 18th century see also West (1991).
GODSTONE (TQ 36 51)
On the Gibbs Brook near Leigh Place (TQ 362 508), 1 km south-east of the village of Godstone. The history of the mills is closely related to that of the TOLWORTH and WOTTON powder mills since all were owned by members of the Evelyn family, who held gunpowder patents in the late 16th and early 17th century (VCH Surrey, 2, 314-8). George Evelyn probably began manufacturing gunpowder at Tolworth and later extended his operations to Wotton. His sons John and Robert worked at Godstone. The Godstone mills may have closed after the monopoly passed to Cordwell and Collins at CHILWORTH in 1636.

Chronology
1589 George Evelyn of Wotton acquired the manor of Godstone and Leigh Place (Manning & Bray, 326-7).
1599, 1604 Patents granted to John and Robert Evelyn and others (VCH Surrey, 2, 314-8).
1613 The Earl of Worcester refers to John Evelyn of Godstone obtaining saltpetre (Rise and progress, 232-3).
1621-32 Series of government contracts with John Evelyn (VCH Surrey, 2, 314-8).
1624 John Evelyn of Godstone erecting new mills (Rise and progress, 238).
1635 Last delivery of powder by John Evelyn of Godstone (PRO: WO 49/70).

Additions 2005-
1636 Evelyn's contract extended to October (Fairclough 2000a, 107-8; 2000b, 116, 117).

Bay Pond, Godstone, at TQ 353 516, which was a reservoir for the gunpowder mills (Tadd 1994, 49), is managed as a nature reserve by the Surrey Wildlife Trust.

ROtherhithe (TQ 36 80)
There are records of a gunpowder mill on land east of the town, which was held from the 1530s onwards by members of the Lee family, and of a gunpowder mill erected by Henry Reve on land called 'the Crenge' in 1554-5 (Rise and progress, 208, 210-11; VCH Surrey, 2, 310, 314).

Chronology
1543 Lease of 1563 indicates that premises on the east of Rotherhithe had been occupied by the Lee family for making gunpowder for 20 years.
1554-5 Henry Reve has erected a mill on 'the Crenge'.
1562 Francis Lee, Brian Hogge and Robert Thomas had erected five new mills and tendered to supply the government.
1563 Lease for 21 years to Francis Lee of tenement, gunpowder mill and wharf on east of Rotherhithe, late in the tenure of Thomas Lee deceased, now of Francis Lee his son.
1578 Francis Lee gunpowder maker to the Queen at Redreff (Rotherhithe).
1600 Richard Neele of Rotherhithe, powder maker.

Additions 2005-
Information and comment provided by Graham Dawson 14/11/2003: Survey of Rotherhithe 1632 (PRO: E178/5672) mentions a tenement and mill called Gunpowder Mill belonging to Robert Hammond. It would lie just west of where the river turns south between Rotherhithe and the Isle of Dogs. Since there is no
reference to a mill there when the site belonged to Bermondsey Abbey, Reve must have newly constructed the mill and watercourses.

**Additional site**

**SOUTHWARK**

An illegal horse mill set up by Thomas Thornhill, saltpetre man, was operating on Bankside in 1630. (*VCH Surrey, 2, 319*).

Chancery suit of 1549 (PRO: C1/11250) re failure to maintain wharf. Witness statement (PRO: C24/16/13) that c.1543 Charles Wolman was put in to manufacture gunpowder for the king. The site is 190 on fig 8 in Carlin's *Medieval Southwark* (1996), immediately west of Tower Bridge. Graham Dawson comments that it was part of a larger property including Carlin site 195, to its west, which did include a tide mill. However, this was derelict by the mid-15th century. It is therefore unlikely that gunpowder production included use of a mill.

Accounts of Sir John Fastolf for June 1459 to Christmas 1460. Tenement at St John's Mill leased to a gunpowder maker as a garden but no rent received for it. (*Magdalen College Oxford, 149/10.*).

Graham Dawson comments (2007) that this relates to the same area as a 1549 reference for Thomas Wolman but considering the gap in time there is almost certainly no connection. Fastolf died in 1459 and this particular property did not come to Magdalen College so does not occur in its accounts thereafter. The reference to the mill is purely locational and Fastolf did not own it.

Fastolf Place area, Dunley property.

c.1543, George and Katherine Nicholls sublet premises, which they leased from the Weldens, to the gunner Charles Woolman to make gunpowder for the king.

Source: Blatherwick & Bluer, 2009, p.98.

**TOLWORTH (TQ 21 66)**

Also known as Long Ditton, Malden and Worcester Park mills, the site was in the manor of Tolworth but on the boundary between a detached part of the historic parish of Long Ditton, the parish of Malden and the former parish of Cuddington. It is on the Hogsmill River which enters the Thames at Kingston and is on the north-west side of Old Malden Lane, which runs parallel to the river. The site is now occupied by nursery gardens and industrial buildings and there is an area of woodland on the south-east side of the road that may have been used by the gunpowder industry in its later years. The Tolworth site is some 3 km downstream from that of the EWELL powder mills.

The mills were probably the ones established in the late 16th century by the Evelyn family who later operated at WOTTOM and GODSTONE. In 1607 the Earl of Worcester, keeper of the nearby Nonsuch Park, was granted the gunpowder patent but sub-contracted the manufacture to the Evelyns (*VCH Surrey, 2, 314*). The Earl built Worcester House near the gunpowder site and the area became known as Worcester Park, an alternative name for the powder mills. The mills probably closed when the site was incorporated into Nonsuch Park (Greenwood 1980) and were re-established in the early 18th century. They were then active until the mid-19th century, when they closed and were replaced by a corn mill, followed by a succession of other industries. The site was cleared in 1950 (Greenwood 1980).
Chronology
1560 Rectory of Ewell granted to Thomas Reve and George Evelyn (Titford 1967, 75-6).
1567 Manor of Long Ditton conveyed to George Evelyn (Manning & Bray, 3, 13).
1589 George and John Evelyn and Richard Hill granted patent (VCH Surrey, 2, 314).
1607-20 Patent held by the Earl of Worcester (VCH Surrey, 2, 314).
1720-64 William Taylor (West 1986).
by 1774 William Taylor, son of William Taylor (West 1986).
1818-19 William Taylor (Enclosure map).
1834 William Taylor (Simmons Collection).
1849 Frederick Taylor (Simmons Collection).
1854 Closed after explosion (Titford 1967, 75-6).

Additions 2005-
1741 Explosion (Ipswich Journal, 14 March 1741).
1742 Explosion (Ipswich Journal, 9 January 1742).

Explosion reports in The Times, 1790-1850
1843: 7 September, 3c (Malden).
1844: 5 February, 5e (Maldon).

For 18th century see also West (1991).

Included in Stidder's Watermills of Surrey (1990, 124-5), which mentions a bedstone in the garden of Old Mill Cottage adjacent.

WIMBLEDON (WANDSWORTH) (TQ 25 72)
On the River Wandle where it forms the boundary between Wimbledon and Wandsworth and also known as Wandsworth powder mills. The location suggested by John Senex's map of Surrey of 1729 is along a stretch of the river upstream from the later Garratt oil mills at TQ 260 727. Documents of 1666 (SHC: 212/107/2) and 1671 (LMA: E/BER/S/T/1I/B1/10) refer to 3 acres of pasture land on the one side of Dyers Land and on the other side of the Powder Mills (SHC: 212/107/2). Dyers Land was probably in the present Summerley Street and Trewint Street area (information from Miss R Ensing, Wandsworth Historical Society).

Chronology
by 1666 Powder mills
1687 Sir Peter Rich, powder maker at Wandsworth and MOLESEY (Tomlinson 1979, 115).
1729 Wimbledon Powder Mills on Senex's map of Surrey.
1753 Wimbledon Powder Mills on Bowen's map of Surrey.

Additions 2005-
Transcript of 1678 inventory and historical introduction published (Crocker et al 2000, ch.4)
Evidence of use of edge runner incorporating mills in the late 17th century (Crocker & Fairclough 1998).
'Wandsworth's gunpowder mills 1656-1713' (Gerhold 2002).

WOTTON (TQ 12 47)
The existence of early powder mills on the Tillingbourne near Wotton House is testified by correspondence of members of the Evelyn family who had powder mills also at TOLWORTH
and at GODSTONE and who owned the Wotton estate from 1579. The mills were probably at Pigeon House pond, immediately north-east of the house but there are other possible sites. There were also brass and wire mills at Wotton in the 1620s. Traces of industry were removed by the remodeling of the landscape by later members of the Evelyn family from 1642 onwards (Brandon 1984). The estate is privately owned.

**Chronology**

1579 Estate acquired by George Evelyn.
1589 Patent granted to George Evelyn, his son John, and Richard Hill, who was probably at ABINGER mill.
1603 George Evelyn died.
By 1625 Powder mills closed.

**SUSSEX**

The gunpowder industry was established in Sussex in the third quarter of the 17th century and continued for two hundred years. Several of the mills were built on the sites of former iron works. There were five mills on the River Asten near Battle and two on the River Brede, at Sedlescombe and near the village of Brede. There was also a short-lived later establishment at Maresfield, 30 km west of the main group, in the mid-19th century. The Sussex mills were renowned for their high quality sporting powder, known as Battle powder, and a special dispensation was granted in the 1772 Explosives Act (11 George III, 61) to allow the continued use of pestle mills, which were in general prohibited, for this manufacture. Steam power was introduced at an early date at Battle, perhaps because of problems with water supply. There is also evidence that wind power may have been used, in the form of a blue and white printed plate depicting 'Powder Mill, Hastings' (SPAB Wind & Watermill Section Newsletter, 30, 31 (1987)).

**Battle and Sedlescombe**

The Battle and Sedlescombe mills were closely related and are most conveniently grouped together. The Battle sites are listed from north to south, downstream along the River Asten, which is now known as Powdertmill Stream. Sites are described by Austen, Cox and Upton (1985, 21, 24-5).

**Addition 2005-**

The English Heritage Monuments Protection Programme (Gould 1993) identified sites of archaeological potential at Farthing and Pepperingeye.

**FARTHING (TQ 737 147)**

Represented by a mill pond.

**HOUSE MILLS (TQ 742 146)**

On the site of an earlier iron works (Cleere & Crossley 1985, 312-13; Straker 1931, 350-1). This became the principal mill of the group and the proprietor's house, which is still occupied, was built adjacent to the mills. The pond is still in water, there are edge runner stones built into the walls of outbuildings and a saltpetre pan has survived on the site.

**Additions 2005-**

Developed as a hotel.
PEPPERING-EYE (TQ 743 139)
The earliest site of the group, dating from 1676. The mill pond has been drained but the bay survives. There is also a building and there are edge runners in the garden patio of an adjacent house.

LOWER PEPPERING-EYE (TQ 745 136)

CROWHURST (TQ 758 118)
Part of a building survives (Austen et al 1985). The site was previously used for iron working (Cleere & Crossley 1985, 326-7; Straker 1931, 352).

SEDLESCOMBE (TQ 781 176)
Edge runners in the garden of a house are visible from the footbridge crossing the stream. (Austen et al 1985).

Chronology
Main source: Blackman 1923, 'Story of old gunpowder works at Battle'.

1676 Peppering-Eye leased to John Hammond of Battle with permission to erect a powder mill.
1710 Lease to William Hammond of Battle, powder maker.
by 1750 William Gilmore at gunpowder mills in parish of Sedlescombe.
1756 Lester Harvey married Jane, daughter of William Gilmore and subsequently succeeded to the Battle and Sedlescombe works.
? William Gilmore Harvey, son of Lester Harvey.
1806 Steam engine under construction by Boulton & Watt for Mr W G Harvey (Birmingham Public Libraries, Boulton & Watt Collection, PF 383), apparently installed at the House Mills.
1820 Firm of Curtis's & Harvey formed and removed to HOUNSWOLD. Harvey succeeded by a Mr Gill, probably Henry Gill, previously at KENNALL VALE in Cornwall (Earl 1978, 41).
? Charles Laurence, proprietor of Peppering-Eye and Crowhurst works, amalgamated the entire group of mills.
1873 Messrs Charles Laurence & Son amalgamated with Messrs Pigou & Wilks of DARTFORD, Kent.
1874 Battle works closed.

Additions 2005-
Explosion reports in The Times, 1790-1850
1798: 3 May, 3c (3 killed).
1806: 25 September, 3d (1 injured).
1807: 9 September, 3d.
1808: 31 March, 3d (2 killed).
1823: 5 September, 3a (2 killed).

1794 and 1795 Daniel Betts and John Betts, sons of Daniel Betts of Battle, gunpowder maker, apprenticed to their father (Webb 1998).

BREDE (TQ 80 19)
On the River Brede, 2 km west-north-west of the village of Brede. The mills were converted from an iron works, which closed down in 1766, and they operated from 1770 to 1825. The ponds were then drained for hop gardens and the buildings were demolished (Cleere & Crossley 1985, 318; Straker 1931, 341-4). Only an incorporating millstone remains at the end of the bay of Powdermill Reservoir (Austen et al 1985, 25).

**Chronology**
1766 Iron works closed down (Cleere & Crossley 1985, 318).
1769 Powder mills leased to Messrs Durrant & Jeakens.
1787 Explosion at Brede Powder Mill belonging to Messrs Brooke, Jenkins & Co. reported in local press
1797 Purchased from the Weston family by Durrant & Jeakens
? Partnership dissolved; John Jeakens sole proprietor
1808 Rebuilt after explosion
1825 Closed.

**MARESFIELD (TQ 46 23)**
At a pond (TQ 462 231) on a tributary of the River Ouse known as the Batts Bridge Stream, 1km south-west of the village of Maresfield. The powder mills closed in the 1850s after operating for only ten years. Subsequent demolition and landscaping has removed all traces of the industry except for one incorporating millstone (Austen et al 1985, 25). 'Powder Mills' are marked on a spurious map of Maresfield Forge dated 1724, which was claimed to have been copied by Charles Dawson, FSA, perpetrator of the Piltdown forgery, from an original map. In fact the mills were built in 1849 on the site of an earlier ironworks which had closed in 1812 (Cleere & Crossley 1985, 342; Straker 1931, 400-3).

The Maresfield Patent Gunpowder Company patented a method of boiling the three ingredients of gunpowder together in a vacuum pan. Lammot du Pont of Delaware, who visited in 1858, was concerned about the credibility of the management (Wilkinson 1975).

**Chronology**
Main source: Lampson, M, [? 1980s] *History of Maresfield Powder Mills*
1848-9 Land sold by the Gage family to Sir John Shelley.
1849 Licence granted for erection of powder mills.
1854 Explosion; works abandoned.
1857 Patent no. 2983, 1 December 1857
1858 Visit by Lammot du Pont. Drayson had left; Frederick G Spray, plant superintendent and managing partner (Wilkinson 1975).

**Additions 2005-**
Henry Drayson was also associated with the site of EYEWORTH (Fritham) in the New Forest, Hampshire (Pasmore 1993; Yoward 1994).

Further historical information on mills in and around Uckfield is provided by Bonnett (2007).