



CHILTERN
OPEN AIR
MUSEUM

*Where buildings come
alive through history*

The Victorian Blacksmith



Location:

- Garston Forge

Practical Notes:

- Your group will be met outside the forge by the blacksmith who will then invite you in.
- Your group will be asked to sit on the seats provided, facing the hearth.
- The hearth area is separated by a bar, which only the blacksmith may cross.

Purpose and content of the activity session:

- During this session the Museum's blacksmith will give your group members an insight into industrial change in Victorian Britain, from local craftsmen and travel limited by the capacity of horses to mass production and railway transport.
- The blacksmith will make a small object out of iron for your group. This will demonstrate the properties of the metal and the ways it can be worked.
- The session is relevant to the study of Victorian Britain.
- It is also cross-curricular with links to science and technology.

The explanation will vary in emphasis having regard to the age, ability and current or recent schoolwork (e.g. Houses and Homes or Materials) or interest if known beforehand.

A brief history of Garston Forge

This forge was built around 1860 at Garston, near Watford. The first blacksmith in the new forge was George Freeman, but from the early 1860s until 1962 members of the Martin family carried on the trade in the forge.

After it ceased to be a forge, the building was used for storage until the site was sold for development in 1982. The building was given to the Museum and dismantled by volunteers. The materials were transported to the Museum by a team of North Watford venture scouts and reconstructed by apprentices from a building firm.

The materials of Garston Forge

The building incorporates a wide variety of materials. The walls are made of bricks, many of that have the initials JC cast on them, indicating their production at John Chapman's brick works at Bucknalls Lane, Garston. The forge was originally in a yard and to recreate this environment, the Museum has built a brick and flint wall outside. Such walls are typical of the Chiltern area, the flints being cheaper than bricks and the combination providing a decorative effect. The roof is covered with slate. Many of these would have come by canal from North Wales; their provenance is indicated by their colour - North Welsh slate is dark grey, slate from Cumbria is purple. The roof has clay ridge tiles with decorative points typical of the Victorian era. The floor of the forge reflects functional constraints. The area where horses would stand to be shod has timber baulks, providing a non-slip surface; bricks form the step by the door; stone covers the floor half around the hearth, providing a hard, fire-resistant working surface.

The Blacksmith, Wheelwright and Farrier: Historical Background

A vital part of the community

Before cars, trains and airplanes the most important means of transport was by horse and cart. The mail coach in the 1880s could go from London to Edinburgh in 27 hours, changing horses 27 times. Because of this, some of the most important occupations of this time were those of blacksmith, wheelwright and farrier.

The village blacksmiths were important and indispensable members of the community who had the reputation of having magical powers as they could change one thing into another with smoke and fire. They did more than just shoe horses [a farrier] or make and fit metal tyres for wooden cart and wagon wheels [a wheelwright], they also provided the metal tools and implements needed for work and home life, in fact they could make or repair anything in metal [a blacksmith].

The village forge

The village forge was a place of peace, with activity taking place in a tranquil sort of way and owners of horses used to say that on entering the forge the horses were quieter than they would be at home.

The forge, or smithy, usually occupied a central place in the village. It was often open on one side and usually faced the village green. It was an important meeting place and centre of village life.

The fire, on a raised hearth, had a canopy and chimney above. Hand bellows provided air to the fire through a blast pipe or tuyere, which were constantly in use to keep the fire alight. The grip on the bellows handle was often in the shape of an upward-turned cow's horn. The fire was stoked with coke using a long handled shovel known as a slice. Usually the blacksmith made all his own tools.

From 'The Cottage Life Book' (ed. Fred Archer, 1974) comes a piece by W. B. Harvey who was a blacksmith's striker at the age of 16 in the village of Kingston near Canterbury.

"We had a shoeing job in the afternoon, but in the forenoon we were to fit a set of tyres for the wheelwright ... The size of the iron tyre was found by 'running the wheel' with an iron disc [the revolutions were counted as the disc ran round the wheel]. This looked simple but was highly skilled; you could wobble the disc and get quite the wrong measurement. When we knew the sizes of the tyres we got down strips of iron and cut off the right lengths, allowing for the weld. We warmed each strip in the fire and hammered it into a circle, first cutting and tapering forks in the ends of the weld. The forked ends were then raised to melting point and, at the moment when the metal ran, we whipped the strip out and onto the anvil. The white-hot iron shot out a shower of sparks under the smith's blows as the weld was made; and the colour finally faded gradually from white to yellow, yellow to orange and orange to dull red and blue-grey as he shaped and finished it. While he put the finishing touches to the tyre, I rolled the wheel across the road to the wheel-pit, where I laid it down, the huge hub resting in a central depression and the rim on the brick circle.

The bellows wheezed and clanked as I brought the fire to a roaring heat and the smith shifted the tyre round in it until the iron was red hot throughout its length. Then seizing the glowing circle with tongs, one on each side, we rushed across the road and lowered it into position round the wheel helping it down with one or two blows from a sledge [a long handled heavy hammer]. Clouds of steam rose as we shrank and hardened the tyre with bucket of water. Lastly nails were driven through holes into the felloes [wooden rim sections], and the job was done."

The traditional shape of the anvil

The anvil, unchanged in design from the earliest pictorial records and perfected by the Middle Ages, stood on an oak or elm block. This was important as it gave 'life' to the anvil. A true, uncracked, anvil should ring like a bell when cracked by a hammer. On the top surface of the anvil are two holes, a square one called a 'Hardie Hole', which is the tool hole, and a round hole used for punching holes in metal (for example nail holes in horse shoes). The projecting front of the anvil was called the beak, with the underside of the beak called the throat.

The blacksmith's leather apron often had a fringe at the bottom; this was used to brush particles of iron off the anvil.

Metal working methods

Wrought iron was the traditional blacksmith's material. Mild steel is now commonly used, which is made in different lengths of various sections: rounds, hexagons, squares, angles and flats. The swage block was designed to hold and bend the different shapes of metal.

Metal working methods in the forge included (and still include) cutting, forging (shaping), bending, fullering (drawing down to make a piece of metal thinner or longer), upsetting (jumping up to make a piece of metal thicker or shorter) and fire welding.

The decline of the blacksmith, wheelwright and farrier

The blacksmith, farrier and wheelwright were all craftsmen whose work mainly centred around the horse as either a means of transport or as a draught animal on a farm. It is therefore not surprising that when mechanical transport succeeded the horse many forges started to handle simple repairs on cars and tractors, going on to become garages. However there are still blacksmiths

today who practice the craft, many of whom produce decorative furnishings. The gates at the Museum's Apple Orchard were designed and created by a blacksmith at Garston Forge.

Access Statement:

Garston Forge:

- There is a step into this building at the small door with a small threshold step inside, but the building is easily accessible using the double door entrance at the side of the building. Please do not cross the barrier into the hearth area.
- The floor is cobbled.

Blacksmith Demonstration: Fully accessible to all visitors.