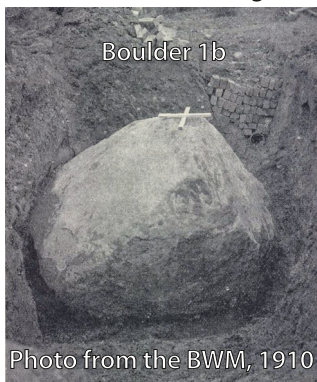


## The Bournville Works Magazine

Bournville Village was created when the Cadbury brothers, George and Richard, moved their chocolate business from the city centre to the outskirts of Birmingham. George's Quaker beliefs inspired him to create working conditions and homes for his workers which would lift them out of the squalor of city dwelling. The new factory opened in 1879 in spacious surroundings with land for housing, and Bournville was born. The Bournville Works Magazine (BWM) was established in 1902, providing an insight into the world of Cadbury. It included articles on the erratic boulders, with a flurry of activity from 1910 - 1913. Louis Barrow and Charles Lapworth took the lead, and George Cadbury himself became involved. Below is a summary of information from the BWM relevant to this trail. **A more detailed account of this history is in 'History and Heroes' on the project website.**



In **February 1910** we find the first significant BWM item on the subject of Erratics. Professor Charles Lapworth describes the 'Bournville Boulder' found in the factory grounds in 1908 and moved to the former Girls' Recreation Ground, (**Locality 8**). In **July 1910** an article by A.C. Hunt identifies "a boulder recently placed on the southern bank of Bournville Lane" (**Locality 1a**). This was found during widening of the lane, and in **December 1910** Louis Barrow included a photo of another large boulder found nearby with a caption identifying it as the boulder at **Locality 1b** (*see photo below*). By **June 1912** the focus had shifted to Cotteridge Park where levelling work unearthed many boulders. An annotated map shows original and new locations of the boulders. Many are now lost. The best of them were displayed at **Locality 5** but are now reduced in number (*see photos overleaf*). By **August 1913** a map showing the ice and boulder transport paths had been installed there.



Louis Barrow reflected that "the mere collection of boulders possessed little interest for the lay mind unless some explanation of their probable history was given". Though the map and pedestal disappeared long ago, Barrow's vision lives on in the project's aim to re-ignite public interest in this Ice Age heritage. **The map can be seen on the project website.**

### Cotteridge Park

Cotteridge Park was opened in 1905, and several years later numerous erratic boulders came to light during levelling work for sporting facilities. This was at the time of Louis Barrow's involvement with the Bournville erratics, and he soon took a leading role in recording and preserving those discovered in Cotteridge Park (*see item on the 'Bournville Works Magazine', left*).

The park's existence was threatened in the 1990s when support services were withdrawn. Public support led to the establishment of 'The Friends of Cotteridge Park' in 1997 (*see reference below*). Since then the park has become a thriving local amenity providing numerous activities based around the recently opened 'Shed'. The boulders had become neglected and many were lost since the time of Louis Barrow, but a project in 2018 gave them a face-lift and raised their profile with the local community. The 2021/2023 erratics project is building on that work.



Glass fragments in Boulder 5e

### More information at: [erraticsproject.org](http://erraticsproject.org)

Selly Manor Museum: [sellymanormuseum.org.uk](http://sellymanormuseum.org.uk)

Friends of Cotteridge Park: [cotteridgepark.org.uk](http://cotteridgepark.org.uk)

BWM photos courtesy of Cadbury Archive, Mondelēz International

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Glacial Boulder Trail 2, 2nd Edition, September 2023



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**Heritage Fund**

UNIVERSITY OF  
BIRMINGHAM



## Birmingham's Erratic Boulders Heritage of the Ice Age

### Glacial Boulder Trail 2 The Louis Barrow Trail Around Bournville and Cotteridge Park



Take a trip back into deep time to discover relics from the Great Ice Age half a million years ago. Thread your way past glacial erratic boulders, mostly from the mountains of Wales and brought here by the power of ice. This trail links these little-known bastions of our prehistoric heritage.





## Louis Barrow

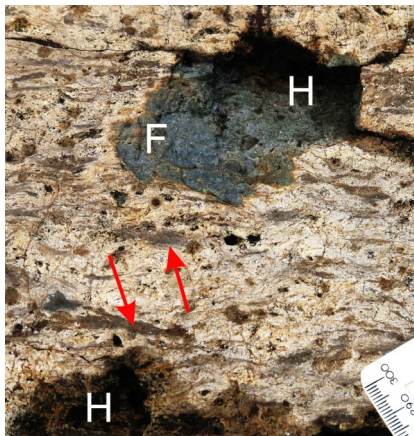
Louis Barrow was the Chief Engineer at the Cadbury factory in Bournville from 1900, a time of expansion for the factory and surrounding Bournville village. He had previously been a student at Mason College (the forerunner of the University of Birmingham) and his studies included the subject of geology under the guidance of Professor Charles Lapworth (*see Trail 1 for more on Lapworth*). For several years from 1908, excavations around the Bournville works and Cotteridge Park unearthed numerous glacial boulders. Barrow's interest in the subject inspired him to consult his former teacher, Charles Lapworth. A lively correspondence ensued which has fortunately been preserved, mainly in the Bournville Works Magazines, along with several articles on glacial erratics and their place in the geological story of the Ice Age (*see 'History and Heroes' on the project website*). It is thanks to Louis Barrow that most of the erratics on this trail have survived.

### What are glacial erratic boulders?

These are boulders moved by a glacier to a different place and left there when the ice melts. The boulders can often be matched with their source, allowing the flow of the glacier to be reconstructed. The photo (top right) shows the eroded east face of Arenig Fawr, the source of most of the local erratics.

### What is distinctive about the Arenig rocks?

The volcanic rocks from Arenig in North Wales display features showing they formed as pyroclastic flows which are very hot, ground-hugging flows of rock debris and gas such as those which buried the Roman city of Pompeii. The photo (below) shows a clear example of a cleaned rock. The weathered surface of the rock is cream-coloured, but where the surface has chipped away (F) the dark green colour of the fresh rock is seen. Larger rock fragments in the deposit often weather out as holes (H). Elongated black fragments (indicated by the red arrows), were originally blocks of pumice (volcanic glass full of gas holes) which became flattened by the weight of overlying deposits whilst they were still hot. Geologists call this a welded tuff.



### What is special about the Birmingham boulders?

The boulders on the trails originated not in the last ice age, but in a more severe, older one, probably 450,000 years ago. Most of these erratics are volcanic rocks from the Arenig area of North Wales - around 80 miles (130km) to the west of Birmingham, but a few are basalts and sandstones from the Midlands. The rocks are exceptionally tough, resulting in unusually large erratics up to three metres across. The photo below shows one of the largest in the area, which is on private land.



### What have these boulders meant to local people?

In ancient times the size of the boulders was an obstacle to movement, so many were used to mark district or property boundaries just where they were left by the ice, or moved short distances. But where had they come from? They were unlike the local red sandstone, which was relatively easy to work for building stones. Theories abounded: were they brought with the Biblical Flood? by giants? or were they meteorites?

Through the 19th century scientists began to unravel the real story of their glacial origins. As more and more were unearthed during building works in the late 19th and early 20th centuries, they became valued as curiosities to be preserved and celebrated.

The photo below shows a large boulder in Cannon Hill Park at the turn of the 20th century, preserved with metal railings and later accompanied by an explanatory notice. The original notice and metal railings are gone, but the boulder is still there and is in Glacial Boulder Trail 7, 'Boulders by Bike'. The smaller boulder in the photo is now missing.



Photo by W.J. Harrison. British Geological Survey, P236744

The walking and cycling trails in this series show some of the ways in which these boulders have captured the interest and imagination of scientists, historians and local people.

### Trail 2 Route Details

This is a circular walking trail, starting at a group of boulders on Bournville Lane, close to Bournville Station, Stirchley, Birmingham, B30 1LG, and a bus stop. The trail heads south to Cotteridge Park, then back towards the Mondelēz Cadbury factory and around the delightful Cadbury Park (formerly the Girls' Recreation Ground). The onward journey leads through the factory to Bournville village and on to the final boulders on this trail in the gardens at Selly Manor (*limited opening, charge applies, see Selly Manor website*). It is well worth allowing time for a full visit.

**Trail length and alternatives:** 2.7 miles (4.3 km). The trail can be divided into two shorter walks: the Cotteridge Park circuit, or a circuit just around Bournville by heading from the start to Cadbury Park (*see map*).

**Accessibility:** The full trail is almost entirely on hard surfaces except for one grass section in Cotteridge park. Only the Cotteridge Park circuit is fully accessible, with an alternative route marked to avoid the grass (*see map*). There are unavoidable steps and awkward road crossings in Bournville.

**Facilities:** The Shed in Cotteridge Park, Bournville Village, Selly Manor.





### Locality 9 - Selly Manor Museum

Go over the zebra crossing, turn right, then veer left to exit onto Sycamore Road in the heart of Bournville Village. Turn left, and cross the road at the zebra crossing. The rich history of Bournville is beyond the scope of this leaflet, but pause a while to explore. To continue, turn right after crossing then left at Maple Road and cross over to enter Selly Manor Museum (*charge applies, check opening times on the Selly Manor website*).

Selly Manor was saved from dereliction by George Cadbury and was rebuilt here in the early 20th century. The medieval Minworth Greaves house was added in 1932, and the final numbered erratic on the trail (9) lies to the left of the door (*see front cover photo*).

Though small, close inspection reveals most of the Arenig ash hall-marks.

More small erratic stones can be found by the entrance to Selly Manor and in a group behind Minworth Greaves. Can you find the genuine erratics?

**Retrace your steps to Bournville Lane and turn left to complete the circuit. Take time to read some of the information boards on the way to learn more about the Bournville story.**

### Locality 8 - Cadbury Park The 'Bournville Boulder'

The original 1908 'Bournville Boulder', (8) was moved here around that time. *(For more on this fascinating story see the 'Bournville Works Magazine' overleaf and the project website.)* Professor Lapworth recognised it as a typical Arenig ash boulder. It has a pitted surface with large inclusions of material ejected from a volcano. It shows layering and a conveniently flat surface to sit on *(see photos overleaf)*. As this was the first Bournville Boulder brought to Lapworth's attention he suggested that it should be labelled, but there is no evidence that this happened.

Continue round the park and turn left to exit onto Bournville Lane. Turn left, and with the imposing Bournville Place over the road head to a zebra crossing. Cross, and go ahead to enter the Mondelēz Cadbury complex via steps or a ramp. Follow the pedestrian route through the factory to the 'Cadbury World' access road.

Onward directions are in Locality 9.

### Locality 7 - Cadbury Park (former Girls' Recreation Ground)

Boulder 7 is one of two similar sized Arenig ash boulders in this park. It has the usual pitted texture, and fragments ejected by the volcano are preserved in the ash matrix.

Retrace your steps and continue around the park to a boulder at a path junction.

### Locality 1 - Bournville Station Boulders

The trail starts at three glacial erratic boulders, prominently displayed on the grass verge above Bournville Lane near the station (*see photo below*). For a closer look, walk to the tree by the station where there is easy access onto the verge. Keep away from the steep drop as you examine the boulders.

These boulders represent the hey-day of erratic discoveries in the Bournville area and are closely linked with the development of the Cadbury chocolate factory. You can learn about their origins in the paragraphs overleaf on 'Louis Barrow' and the 'Bournville Works Magazine'. **(Also see 'History and Heroes' on the project website.)**

Boulder **1a** was installed on a plinth at this site in 1910, close to its Ice Age resting place. It has the typically rounded edges of Arenig ash erratics, and shows layering of ash and rock fragments, especially on the uphill face. There are faint grooves or 'striations' on the upper surface where the boulder has been scratched during transport by the ice. This is almost certainly the boulder referred to in this intriguing statement in the BWM, August 1913: "In the concrete foundation under this boulder have been deposited certain records in an air-tight case, which may prove of use in the distant future". Boulder **1b** was found nearby (*see photo overleaf*) and mounted later in 1913. It has the same origins as 1a, but is smoother and shows more prominent cavities where rock fragments have weathered out. It has fine parallel grooves, probably striations as in 1a. **1c** is comparatively small, but shows strong layering and alignment of rock fragments caused as the ash fell and settled.

Return to the pavement, walk past the erratics and some more stones (not erratics, but dressed blocks of local red sandstone). At Franklin Way turn left and continue to the junction with Mary Vale Road. Cross, turn right, then left into Franklin Road. After 250m, turn left into Cotteridge Park and walk parallel with the road to the car park. Here you will find a small boulder near the park sign. (See overleaf for more on Cotteridge Park).





### Locality 6 - The Friends of Cotteridge Park, notice board

Here a small, flat-topped, well-smoothed erratic (6) serves as a step to read the notices, but look closely to see how many typical Arenig ash features you can find.

Walk on to Franklin Road, turn right, and continue past the car park, staying on the pavement to a crossing with a refuge. Cross, and continue carefully across the busy Beaumont Road and then Mary Vale Road. Head for the pedestrian passage at the side of the private car park entrance. Follow the indicated route alongside the wall, follow it round to the left and turn right before a gate. Follow the path (with steps) down to a left turn into the formally laid-out Cadbury Park, a quiet garden which once belonged to Bournbrook Hall. It became the 'Girls' Recreation Ground' for factory workers in the early 20th century. Enter the park by the columns, turn left, and follow the trail route round to the old lily pond, turning left to visit the next erratic boulder.

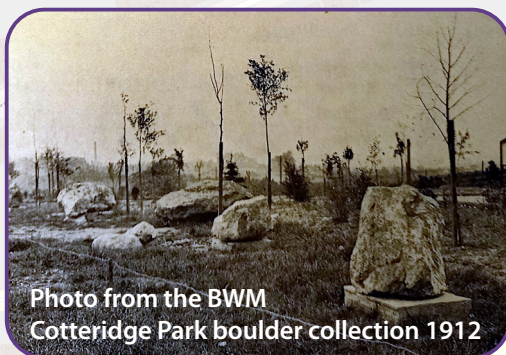


Photo from the BWM  
Cotteridge Park boulder collection 1912



The Louis Barrow Boulders

### Locality 5 - The Louis Barrow Boulders, Cotteridge Park

These boulders (5a - e) played a major part in Louis Barrow's efforts to increase public awareness of the Ice Age, and were duly cleaned during the 2018 project (see 'Cotteridge Park' overleaf). A descriptive plaque has replaced the former pedestal. It is known from the BWM records that there were at least 15 erratics here in 1913, including a "big saucer-shaped boulder, blackened by smoke and coal dust" found at the nearby engine sheds. Do you think this one is still here? 5a is partially smoothed but with one jagged edge suggesting it may have been broken in recent times. 5b is well-rounded by the ice and contains rock fragments in layers. One face shows more tortuous layering with larger cavities than the opposite side (see photo far right). 5c is the largest boulder here, and may be the one left of centre on the 1912 photo above which was described as '8 feet diameter'. If you look closely you can see small holes. These were bubbles where gases escaped as the rock cooled. The smaller boulder, 5d is well-rounded with small cavities. 5e has aligned black glass fragments formed from compressed pumice (see photo overleaf). Can you find them?

Return to 5a, turn left and head downhill to the Friends' notice board.

### Localities 2 and 3 - Cotteridge Park North

This small boulder (2) shows some of the typical features of Arenig ash boulders, including some evidence of layering.

Follow the path away from the road and immediately turn left off the path and go across the grass to two prominent boulders in the field. (The dashed line shows an alternative route avoiding the grass, but omitting Locality 3.)

The far side of the large boulder (3a) clearly shows the typical features of Arenig Ash erratics (see front cover photo.) The ash was deposited in layers containing pebbles of various sizes. These have since weathered away leaving holes in line with the ash beds. The ash would have been deposited in horizontal layers. Boulder 3b shows rather more irregular streamlining of the layers with large holes where sizeable pebbles would have been included as the ash fell and settled.

Continue around the wooded area back to the main path and turn left to a junction, passing the children's playground and The Shed on your right. At the junction note two small boulders either side of the path to the old shed.

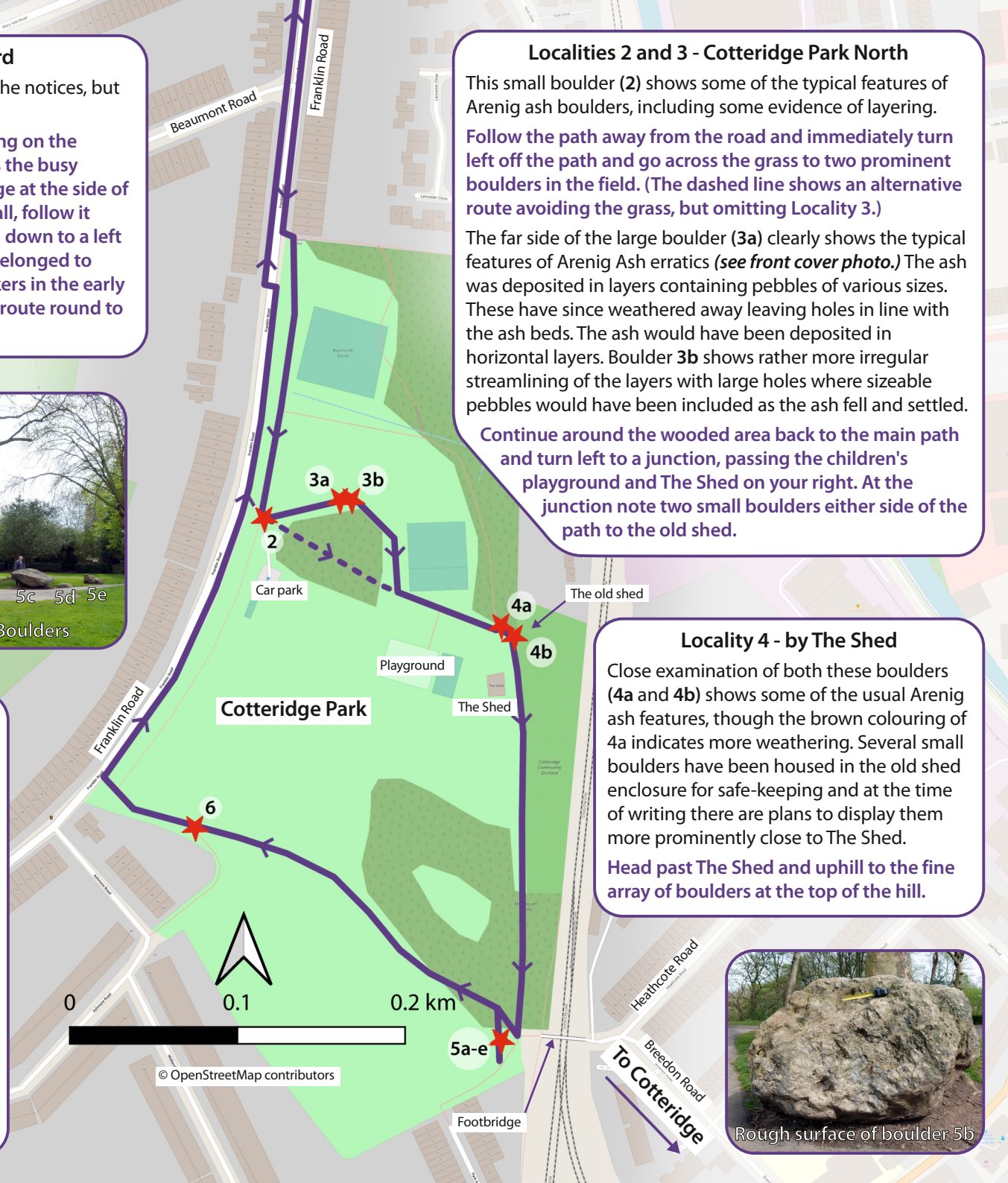
### Locality 4 - by The Shed

Close examination of both these boulders (4a and 4b) shows some of the usual Arenig ash features, though the brown colouring of 4a indicates more weathering. Several small boulders have been housed in the old shed enclosure for safe-keeping and at the time of writing there are plans to display them more prominently close to The Shed.

Head past The Shed and uphill to the fine array of boulders at the top of the hill.



Rough surface of boulder 5b



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