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FIELD GUIDE TO FOSSIL COLLECTING AT BARTON-ON-SEA IN HAMPSHIRE

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Barton-on-Sea is one of the best fossil collecting sites in southern Britain for families. The long sandy beach and low cliffs provide a safe hunting ground and provided they are well-supervised, children can enjoy finding a good range of fossils from tropical Britain during the Middle Eocene that were deposited between 41.3 and 37 million years ago.

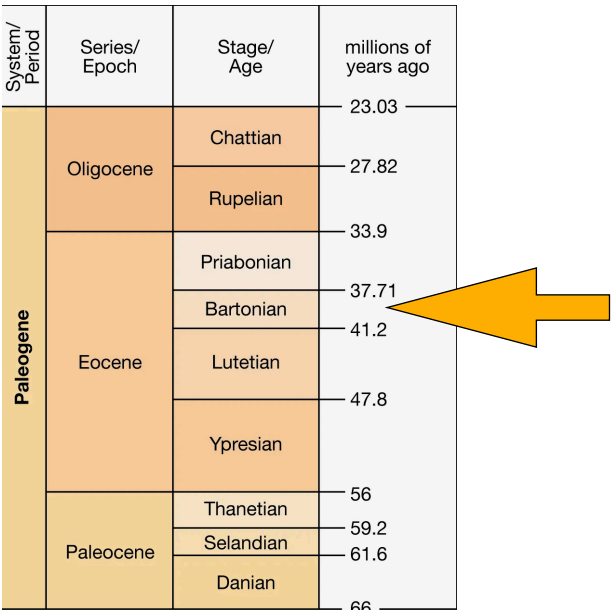
Throughout the year the soft clays and sands are eroded by extreme weather conditions and rough seas, exposing countless fossils in the process, in particular bivalve and exotic gastropod shells, and shark and ray teeth. The Barton Beds of Barton Cliffs are also well known for their reptile remains. Turtles are particularly well represented (*Argilochelys, Echelon, Puppigerus, Trionyx*) but snakes (*Palacophis)* and lizards have also been found.

As with any fossil-bearing site near to the sea, before visiting the location, it will be prudent to check the tide times, as collecting on a low tide is highly advisable. Try to choose a good low or receding tide as it will also give you more time before the tide comes back in.

Under no circumstances should you attempt to climb the cliff, particularly if you have children in tow. Despite well-trodden paths that lead over the cliff, the hazards can be great and many a fool-hardy person has found themselves knee deep, or worse, in the Barton Clay which can be saturated with rainwater. Stay at beach level and there will be plenty to find. The beach is totally flat and on a low tide shark teeth can be collected from the shoreline. Sharks' teeth can also be found in the shingle of the foreshore, particularly just beyond the sea defences. These come from beds that also contain many other fish remains, such as pieces of jaw, which can also be found scattered across the beach in the sand and shingle.

GEOLOGY

The cliff exposures of the Barton Beds between Highcliffe in Dorset and Barton on Sea in Hampshire are the type section of the Bartonian age and are highly fossiliferous. They are Middle Eocene in age and were deposited between 41.3 and 37 million years ago. The beds composed of marine clays, silts and sands, deposited in a generally shallow, sub-tropical sea that stretched to the southeast of the present shoreline and across the Hampshire-Dieppe Basin.



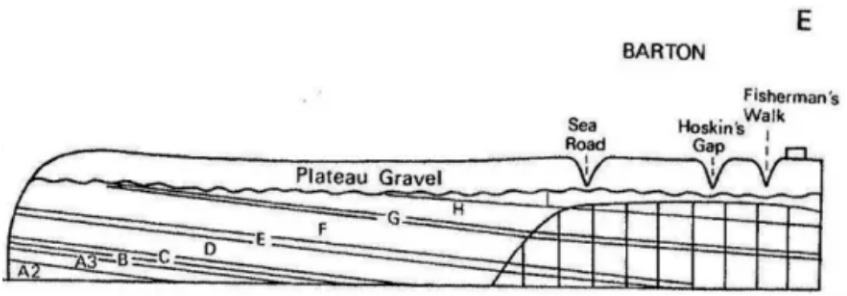
The environment was sub-tropical partly because the average global climate was higher than today and partly because Britain was about 100 further south of its current position.


ONE PENNY
1998

The Cliffhanger car park is at postcode BH23 5DF. This large **car park** has a capacity for 594 cars, with easy access to the beach. There is also a restaurant and toilet facilities here. Walk towards the sea by following the path down to beach level where the various beds of the Barton Clay Formation are immediately visible in the low cliffs. The Barton Clay measures approximately 30m thick and is one of three formations belonging to the Barton Group exposed in the cliff. Overlying the Barton Clay is the Chama Sand and Becton Sand. The fossils of the Barton Clay reveal a diverse marine and neighbouring terrestrial ecosystem. However, it's the marine mollusc fauna of the Barton Clay which attracts the most attention, in particular the shells of gastropods, bivalves and scaphopods.

These shells may be washed up along the foot of the low cliffs or may be embedded in the clay itself and prised out very easily. Fossils can be found along the entire stretch of coast between Highcliffe and Barton on Sea. Close inspection of the Barton Clay reveals masses of broken fossil material alongside plenty of complete specimens.

As shown on the chart below, the Barton Clay is composed of several beds, all of which contain a different fauna of fossils.



The sea wall now obscures some of the higher beds (i.e. E, F, G and H) and consequently fossils from these horizons are increasingly rare. Nonetheless, fossils are plentiful and visitors will have no difficulty in obtaining a good range on their visit to the location.

There are well over 600 different fossil shells to be found at Barton-on-Sea. Here we present a simple guide to the most commonly found shells and vertebrate fossils and those you are most likely to encounter. For more fossils from this site, visit https://www.dmap.co.uk/fossils/ A Collection of Eocene and Oligocene Fossils.

Sycostoma pyrus

Crenaturricula crassicosta

Clavilithes pinus

Sassia arguta

Venericardia sulcata

Volutospina luctator

Typhis pungens

Rimella rimosa

Barbatia appendiculata

Bathytormus sulcatus

Volutospina ambigua

Volutospina scalaris

Fusinus porrectus

Ampullina gross

Volutospina athleta

Haustator editus

Shark teeth are washed out of the clay cliffs and can be found by walking along the shoreline, particularly immediately after a high tide. As with all coastal locations, a fossil hunting trip is best timed to coincide with a falling or low-tide. It is best to arrive on a fairly high tide and stay until the tide retreats, as sharks' teeth can be found for quite some way out lying on the surface of the sand.

Notorynchus kempi
Cow Shark

Jaekelotodus trigonalis
Sand Shark

Striatolamia macrota
Sand Tiger Shark

Squatting sp.
Monk Fish (Angel Shark)

Striatolamia macrota
Sand Tiger Shark

Lamniform Shark vertebra

CLEANING & STORING YOUR FINDS

Cleaning & preservation
Most of the fossils that you will find at Barton-on-Sea have already survived 40 million year! They have been buried in sediment and washed around by the tides. However, treat them with care, as some can be incredibly fragile and will need to be cleaned and treated, to allow them to be handled.

Loose clay can be removed very carefully with a toothbrush. Some of the gastropods might have clay inside the shell, so extra care is required here. Leave them to dry naturally and not on top of a radiator. Sharks teeth will need no extra treatment to preserve them.

Any fossil found on a beach or exposed to salt water will need desalination. In other words you do need to wash the seawater out of your fossils as the absorbed salt may lead to long-term damage, particularly of the shells.

Do not be tempted to varnish your fossils as this can leave an unsightly surface coating. However, you might need to treat more delicate specimens. For this, simply dilute some PVA in water at a ratio of 1:3 (PVA:water.) and allow to dry. This will help to harden the more delicate specimens.

Storage
Storage is a matter of preference and small boxes of card or plastic are probably a good place to start (See https://earthlines.com**).** Most importantly, your specimens need a label. A fossil collection will be worthless if you do not, at least, record where you found the fossil, even if you don't know the fossil names - you can always name them at a later time. A simple label like this example will be useful.

Name: Sycostoma pyrus (Fossil gastropod)
Location: Barton-on-Sea, Hampshire
Geology: Barton Clay
Age: Eocene. Bartonian Stage,
Date found: June 2025

DISCLAIMER

This downloadable PDF is one of a series of general guides to fossil collecting localities and not an extensive manual for health and safety when visiting such sites.

Furthermore, because potential hazards may change over time, prior to undertaking any fossil collecting activities, you need to make yourself aware of any RISKS, DANGERS, HAZARDS and LEGAL IMPLICATIONS associated with visiting and collecting fossils at any particular site.

UK Fossils, authors or any associated parties cannot be held responsible for your failure to do so, nor any consequences thereof.

Enjoy your fossil collecting safely and responsibly.

Locations such as this always provide 'spare' fossils which can be donated to schools and are gratefully received. Details can be found here; https://earthheritagetrust.org/fossil-resources-boxes-for-schools/