

FIELD GUIDE TO FOSSIL COLLECTING AT BLUE ANCHOR IN SOMERSET







FIELD GUIDE TO FOSSIL COLLECTING AT BLUE ANCHOR IN NORTH SOMERSET

The coast of North Somerset, between Hinckley Point and Blue Anchor, near Watchet, has long been known to geologists for its superb exposures of the Rhaetian sediments of upper Triassic age and the lower Jurassic rocks. The rocks span the transition from the Triassic period, when Britain was experiencing an arid climate and was entirely dry land, to the Jurassic period when Britain gradually submerged under the sea, bringing with it marine life.

The photo below shows the Blue Anchor Fault: a distinct fault in the cliffs, at the east end of the bay, showing the red sandstone of late Triassic age against the blue shales of the Lower Jurassic. A small gully has formed between the two caused by erosion along the fault line.



THE GEOLOGY



On this section of the Somerset coast you can examine the fine coastal outcrops which expose the transition from fossiliferous Rhaetic beds to Liassic marine shales and limestones. Tightly folded and faulted structures, with gypsum veins, are well exposed in the cliffs and wave cut platform.

The red rock is Triassic-aged Mercia Mudstone, to the left is Jurassic interbedded marls and muds (with evaporites like gypsum). You can tell this is a normal fault because the Jurassic strata is younger than the Mercia Mudstone strata. This means the Jurassic strata has slid downwards to sit beside the Triassic rocks. The Triassic rocks are not fossiliferous

The Westbury Formation of the Rhaetic strata include the hard gritty calcareous sandstones of the Bone Bed. This is often rippled, with small fish scales (*Gyrolepis*), fish teeth (*Acrodus*, *Hybodus*), spines (*Nemacanthus*), plesiosaur vertebrae and coprolites. The dark shelly limestones shales and mudstones of the Mercia Mudstone contains thin-shelled bivalves, including *Chlamys valoniensis* and *Rhaetavicula (Pteria) contorta*.

At the very top of this formation is the Basal Bone bed. Below is a layer 6.4m-thick of black fossiliferous shales with thin, often nodular, limestone. Occasional sandstones can be found in the lowest 1.2m. Larger bones can also be found in this layer, but are less common. The middle sections consist of a *Ceratodus* Bone Bed followed by massive grit containing fish remains resting on thin, ripple-marked sandstone. This is the layer that is of most importance as far as collecting is concerned. Blocks of bone bed can be seen on the foreshore. You will need a good hammer and chisel, as the bone bed is very hard.



On the west side of the headland is where the Triassic rocks of the Mercia Mudstone Group are located. The other side of the headland reveals Jurassic rocks, principally of the Blue Lias Formation, which succeed the Rhaetic beds and are exposed on the foreshore, The lowest beds consist of alternating massive limestones and shales containing *Liostrea hisingeri*. Some 6 m from the base are flat ammonites of the species of *Psiloceras planorbis*, the earliest known ammonites in Britain.

Low tides are essential for this itinerary. Since high tides reach the base of the coastal cliffs, visitors must take care not to be caught by the incoming tide.





Rhaetic Bone Bed
containing teeth, scales and
bones.
Upper Triassic.



The rocky foreshore east of the headland and composed of Liassic limestone and shales. *Gryphaea arcuata* oysters are abundant. The shales contain many, slightly crushed, specimens of the ammonites *Amioceras semicostatum*.





Caloceras johnstoni
Blue Lias Formation



Psiloceras planorbis
Blue Lias Formation



Block containing a partial *Coroniceras ammonite*





Arnioceras semicostatum
Blue Lias Formation



Coronicerias sp.
Blue Lias Formation



Pentacrinites fossils
Blue Lias Formation



Paracoronicerias
Blue Lias Formation

Psiloceras planorbis





Gryphaea arcuata
'Devil's Toenail' oyster
Blue Lias Formation



Chlamys valoniensis
Bivalve
Blue Lias Formation





CLEANING & STORING YOUR FINDS

Cleaning & preservation

To the vast majority of amateur collectors and tourists visiting Blue Anchor and the surrounding north coast of Somerset, the Gryphaea (Devil's toenails) and ammonites are probably the most common find. They are also easy to collect in the beach debris, and require no tools with which to collect them. Just ensure you only collect ex-situ (i.e. loose material) This is an SSSI site, so no digging into the bedrock.

Although it is inadvisable to use varnish on fossils, as it leaves a nasty stain over time, the flattened ammonites such as *Psiloceras* do look better for a thin coat of varnish or even better, Paraloid B-72 which will enhance their colour.

Storage

Storage is a matter of preference but 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: *Gryphaea arcuata*

Location: Blue Anchor Beach, Somerset

Geology: Blue Lias Formation

Age: Lower Jurassic, . Pliensbachian Stage

Date found: May 2024

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.