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FIELD GUIDE TO FOSSIL COLLECTING AT WHITBY IN NORTH YORKSHIRE

Cliffs to the east of Whitby

FIELD GUIDE TO FOSSIL COLLECTING AT WHITBY IN NORTH YORKSHIRE

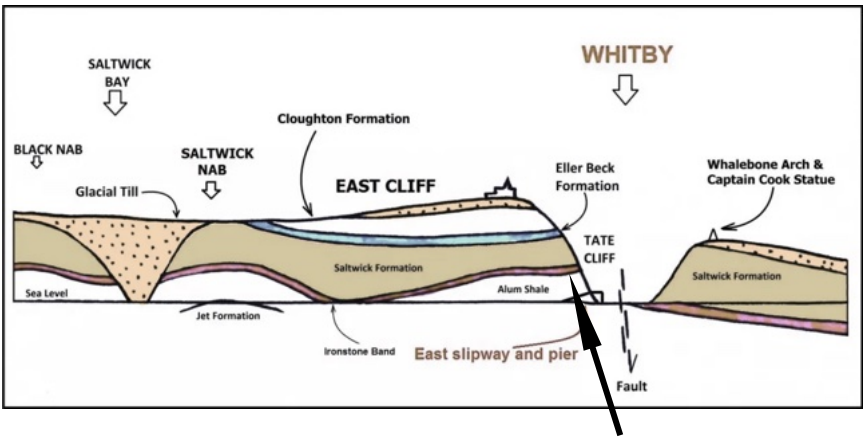
Whitby is a popular destination for fossil hunters. The town has long been a major study site for geologists and fossil collectors and the location is famed for its ammonites and massive marine reptiles, many of which are seen in the town's museum. Competition for fossils is fierce in the height of the season, as tourists try their luck at finding a nice specimen.

Whitby's geology is dominated by the Whitby Mudstone Formation, a series of mudstones, shales, and associated rocks deposited during the Toarcian stage of the Lower Jurassic period, around 183 million years ago. The rock's Liassic fossils are also found in the Beacon Limestone Formation of the fields around Ilminster in South Somerset.

The nodules are eroded out of the cliff, which at first are not easy to spot. Train your eyes to look for those with a rounded or an oval appearance. The nodules drop out of the eroding cliffs and are further eroded by the sea, often exposing the keel of the fossil ammonite within. Fresher nodules will have the same outer appearance but will be less sea-worn. The nodules are spread over the entire beach section, so remember that one place is as good as another! Then hit the nodule with a geological hammer, making sure you wear protective glasses or goggles. The nodule should split and in doing so reveal the ammonite fossil within.

As with any coastal location, be very aware of the tides.The tides a Whitby are very powerful and people who aren't careful can easily get trapped by them. If you're setting out in search of Whitby fossils, you need to make sure you know exactly what time to be on the beaches, and when you need to leave by to avoid the returning sea. Consult with a tides timetable and Only ever set out on a fossil hunting walk when the tide is going out. Not only will it give you the best chance of finding something, it's also the safest time.

GEOLOGY



The Whitby Mudstone Formation's **Alum Shale Member** is exposed on the highest part of the shore and at the foot of East Cliff. The Alum Shale is a mudstone; grey, non-bituminous, with common layers of grey calcareous concretions particularly in the lower (Hard Shale Beds) and upper (Cement Shale Beds) parts; the median part (Main Alum Shale) is softer, less silty and generally less calcareous, and weathers pale grey and yellow. Fossils found here include ammonites, bivalves and belemnites, all common throughout and are from the Lias Group of rocks, being of Toarcian age..

Above the Alum Shales lie the Dogger Formation, Saltwick Formation and finally, at the top, the Eller Beck Formation, all of which are from the Ravenscar Group of rocks , which are Aaelenian in age. (Upper Lias.

Dactylioceras tenuicostatum

Hildoceras bifrons

Dactylioceras commune

Hildoceras lusitanicum

Grammoceras toaurense

Pleuroceras hawskerense

***Phylloceras* sp.**

CLEANING & STORING YOUR FINDS

Cleaning & preservation

Most of the fossils that you will find at Whitby have already survived 180 million years! They have been buried in sediment and washed around by the tides. The nodules will require no further treatment other than a wash in tap water.

Any fossil found on a beach or exposed to salt water will need some degree of desalination. You do need to wash the seawater out of your fossils as the absorbed salt may lead to long-term damage, particularly of the fossils found in the shales and not in nodules..

Do not be tempted to varnish your fossils as this can leave 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 any 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: *Dactylioceras athleticum*
Location: *Whitby, North Yorkshire*
Geology: *Alum Shale Member, Whitby Mudstone Frm.*
Age: Jurassic. *Toarcian Stage, Lias Group*
Date found: *January 2023*

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/