

**FIELD GUIDE TO
FOSSIL COLLECTING
AT KING'S DYKE, WHITTLESEA.
IN CAMBRIDGESHIRE**







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The fossiliferous Oxford Clay Formation is conveniently exposed in a designated fossil collecting area, set inside the King's dyke Nature Reserve. The Oxford Clay is one of the best places for finding fossils in the country, and Kings Dyke is one of the best Oxford clay sites that is still accessible to the public and all year round. This is a very family-friendly site and very safe for children.

Please note that access to the reserve is only open to current members who will be provided with a code for the gate, which is currently locked. If you are not a member you will need to complete a membership form, via the King's Dyke website, to obtain a permit and access details before you visit.

This typically takes a week to process so if you are intending to visit allow an appropriate time period. The site re-opens in June 2025 and no applications will be considered until then. Further information is found at <https://www.kingsdykenaturereserve.com/>





THE GEOLOGY

The Peterborough Member of the Oxford Clay Formation is found at King's Dyke Pit, where spoil tips are provided for members to look for fossils. The spoil is regularly topped up by the working quarry next door and there is always a good variety of fossils to be found.

The **Oxford Clay** (or **Oxford Clay Formation**) is a Jurassic marine formation which underlies much of southeast England, from as far west as Dorset and as far north as Yorkshire. The Oxford Clay Formation dates to the Jurassic, specifically, the Callovian and Oxfordian ages, and comprises two main [facies](#). The lower facies comprises the **Peterborough Member**, a fossiliferous organic-rich mudstone. This facies and its rocks are commonly known as Lower Oxford Clay. At King's Dyke the rocks are of Middle Callovian age, in the Jason Biozone.

Oxford Clay appears at the surface around Peterborough and is exposed in many quarries around this area. The top of the Lower Oxford Clay shows a lithological change, where fissile shale changes to grey mudstone.. The mudstone is highly fossiliferous and where *Kosmoceras* is the most abundant Lower Oxford Clay ammonite. King's Dyke will allow collection of fossils found at the site, which can vary considerably on each visit. In addition to ammonites, (many badly crushed.), belemnites, bivalves, and other benthic fauna can be expected. Marine reptile bone is common and represented by plesiosaur, ichthyosaur, and crocodile.

The Oxford Clay here dates back to the Jurassic period 140 million years ago. At that time, Kings Dyke would have been at the bottom of a warm tropical ocean. The seas would have been full of various species of shellfish such as ammonite and belemnite, found in abundance in the fossil area. Middle-sized predators would have included ichthyosaurs (a dolphin-like creature) and plesiosaurs. Both of these would have been about 4-6m in length as would the Jurassic sharks and crocodiles. Fossils of all of these creatures are regularly found in the fossil area. Fossilised wood is also regularly found.



The fossil area, as you might expect, can be very muddy but fossils are found more easily when it has rained, as they stand out amongst the mounds of grey clay.

No equipment will be required other than a selection of boxes or containers to put your finds in. The ammonites are very fragile and may need to be carefully wrapped in tissue paper or kitchen towel for the journey home.



Kosmoceras jason



Crushed *Kosmoceras jason*



Ichthyosaur rib



***Cylindroteuthis puzosiana*
Belemnite**





Cryptoclidus eurymerus.
Plesiosaur tooth



Ophthalmosaurus sp.
Jaw section of ichthyosaur



Gryphaea dilatata
Oyster



Hybodont shark spine





Vertebra of ichthyosaur



**Caudal vertebra of
plesiosaur**



**Articulated vertebrae of
plesiosaur**





The spoil tips at King's Dyke Nature Reserve are topped up regularly with fresh material from the quarry next door (see bottom photo). Regretfully, the spoil tips do not show the layers from which the fossil originated. Any bone fossil found is unlikely to have associated pieces alongside. The advantage, however, is that the site is easily accessible and ideal for groups, as well as families.



Cylindroteuthis puzosiana
Belemnites



Scapula and vertebrae of a plesiosaur



CLEANING & STORING YOUR FINDS

Cleaning & preservation

The vast majority of amateur collectors King's Dyke Nature Reserve will find that their fossils collected from the site will require no tools with which to prepare them. Just ensure you clean any clay off with an old stiff toothbrush, or similar. Bone will need to be preserved and Paraloid B-72 is ideal for this purpose. Paraloid needs to be diluted in acetone but pre-prepared solutions are available from Zoic Palaeotech. Go to: <https://www.zoicpalaeotech.co.uk/products/20-wt-vol-paraloid-b-72-premixed-in-acetone-150ml>

It is inadvisable to use varnish on fossils, as it leaves a nasty stain over time and is not a preservative. The Paraloid is ideal for the *Kosmoceras jason* ammonites also found at this site.

A 'poor man's alternative to Paraloid is using a 1:3 dilution of PVA: water, which may help stabilise the fossil.

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: *Kosmoceras jason*

Location: King's Dyke, Whittlesea, Cambs.

Geology: Oxford Clay Formation, Peterborough Member

Age: Jurassic. Callovian Stage

Date found: February 2016

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.