

Making your own collection of fossils

Part I – Expedition preparation

There is nothing quite like spending a day knee-deep in clay, cracking open rocks with fingers so cold that you can no longer feel them. No, I mean it! Once you have cracked open that rock and found your first fossil, you will be hooked. There you stand (in the mud and the cold maybe), holding in your hand the fossilised remains of an animal or plant that last saw daylight *millions* of years ago. You are the first person *ever* to see that fossil. It is a magic moment.

OK, I admit it; I love collecting fossils. But I am assured that the feeling of discovery and excitement is just as powerful for those of you who might like to go out and collect minerals or study rock formations. The fascination of finding out something about how the land under your feet is put together - what layers there are, how they might have been mixed up or folded, whether an ancient lake lies under your feet or a distant desert – is frankly addictive. And it gets you out into the healthy fresh air too!

So, to help you get started, here is a guide to making your own fossil collection. In this first part, we discuss safety, equipment, places to go and how to know when you've found something.

Geological collecting guide

You may have heard of the Countryside Code – a list of things to do (or not to do) that helps everyone to enjoy the countryside, whether they live there, work there or are just visiting. Well, there is a similar guide for geology fieldwork that helps to keep you safe and landowners happy. The Geological Society of the UK produce leaflets with this code in, which they will gladly send to you (see Part 4 of this series). The Code is a list of common sense suggestions, and easy to follow:

- **Be aware of danger.** Always remember that fieldwork is potentially hazardous: the quarries, excavations and cliffs that so often provide the best exposures for study are also inherently dangerous places.
- **Get permission.** Don't visit any field site without obtaining the prior permission of the owner. Bear in mind that you may need a guide to conduct you round a working quarry. Never enter a working quarry without first visiting the quarry office.
- **Let people know.** Don't do fieldwork by yourself if working in uninhabited or remote areas. Leave others with information of your intended route and don't depart from your plan.
- **Wear good footwear.** Wear strong and waterproof footwear with non-slip soles.
- **Be warm and dry.** Always carry warm and waterproof clothing if you plan to spend several hours in the field.
- **Keep your hat on!** Wear a hard hat when working near steep faces.
- **Watch out for falling rocks.** Be aware that rock falls and collapses of sand and gravel faces can occur at any time and without prior warning.
- **Watch that hammer.** Use your geological hammer sparingly, and only at sites where hammering is permitted. Never hammer rocks without wearing protective glasses or goggles.
- **Don't get washed away.** Don't visit coastal sites without checking on tide times. Ensure that you have a means of retreat if caught on a rising tide.
- **Do not climb on steep faces.** Use binoculars to study rocks when they are too dangerously situated to be approached safely.

- **Be prepared for anything.** Take sensible safety precautions at all times - always carry appropriate safety equipment, including a compass, and a First Aid kit. A mobile phone might come in handy as well if you get into trouble.

Joining a club

If you are keen to get started on your own collection, an excellent way to begin is to join a club of like-minded fossil fanatics. All over the country there are geology clubs – many established over 100 years ago, when collecting *everything* was fashionable. Most of these geology clubs run workshops in local museums, organise talks and may even have a field trip programme that will help you to discover what the local area has to offer in the way of fossil-collecting localities. Most of the people that run these clubs or that attend them regularly will be delighted to talk to you about fossils and help you get started.

Check out:

RockWatch, the young Geologists club; <http://www.rockwatch.org.uk/>

Good advice on getting started with geology collecting;
<http://www.rockwatch.org.uk/rockhound.html>

The Geologist's Association list of local clubs;
http://www.geologist.demon.co.uk/local_groups.html

Finding out more about fossils

Before you step out onto your first cliff, maybe you had better brush up on what you might be looking for! An excellent place to start is your local museum; almost every museum across the country has a collection of the standard types of fossil – ammonites, belemnites, various gastropods (snails), sea urchins, sponges and even an occasional piece of dinosaur. By looking at these fossils, you will begin to develop 'The Eye' – an ability to see fossils when what you are looking at looks nothing like a fossil! This is called 'getting your eye in' and is covered in Part 2 of this series of articles.

Books and websites are also good for finding out more about fossils and how they formed, where they might be and how to go about finding them. The more you read and the more you handle fossils, the easier you will find it when you go out exploring for the first time.

Check out:

Kid's Ark, a site full of information about nature and science, has a good page about fossils too; <http://web.ukonline.co.uk/conker/fossils/index.htm>

The Dinosaur Society was set up for anyone who is fascinated by dinosaurs;
<http://www.hmag.gla.ac.uk/dinosoc/>

The 24 hour Museum is a gateway to every museum in the UK;
<http://www.24hourmuseum.org.uk/>

Safety

Before you grab a hammer out of the garage and go out looking for a cliff to hit, there are a few things you might like to read up on and think about. A falling rock is considerably harder than the human body, and hammers tend to leave painful bruises on fingers, legs and bystanders if not used properly. It may sound boring, but knowing a bit about safety and preparing properly for your field trip could actually save your life.

Check out:

The Geology Society's fieldwork guide;

http://www.geolsoc.org.uk/template.cfm?name=fieldwork_code

Where to go

Knowing where to look is as important as knowing what to look for, and luckily for us, the geology of the British Isles is hugely diverse – and well studied. This means that it is relatively easy to work out what age the rocks are around you, what they are likely to be made of and what fossils (if any) you might find. Having an idea of what to look for at a site is important – the real world of geology is not like Jurassic Park! You are more likely to find a lump of rock with an 'interesting' smudge in it than a trip over the fully articulated skeleton of a Tyrannosaurus rex, so knowing what the smudge is, what it looks like and how common it is at that site is very helpful.

You can always visit your local museum or even library to see if they have any maps of the local area that might help you to find a good spot for fossils.

Check out:

Discovering Fossils UK. A brilliant site to get you fired up and collecting. This site shows you where to go to find fossils, how to collect them and then how to take them home and protect them. Well worth a look; <http://www.discoveringfossils.co.uk/>

UK Fossils info – another good site that will help you work out where to go to find the fossil of your dream; <http://www.ukfossils.info/>

The British Geological Survey have maps of almost the entire country, detailing the rocks to be found in each area; <http://www.bgs.ac.uk/bookshop/catalogue.cfm?id=2>

Equipment

Another good thing about going out into the field and looking for fossils is that you won't need that much equipment to get started. A hard hat is a must to protect you from falling rocks, and many sites won't allow you to collect without one. It is also important to get hold of proper geological hammers and chisels; these are made from special toughened steel that won't shatter when you use it against rock. Carpentry hammers are not as tough and can be highly dangerous to use.

Check out:

Watkins and Doncaster have been selling field equipment for biologists and geologists for over 100 years; http://www.watdon.com/watdon_home.html

The Geologist's Association sell many of the items you might need; <http://www.geologist.demon.co.uk/merchandise.html>

The law!

One final thing to do before putting on your hard hat and skipping into the distance is to check out the law regarding the area you want to collect in. Some areas may look abandoned and overgrown, or quiet and peaceful – and what could possibly be wrong with picking fossils up off a beach? Well – plenty! In recent years, fossil hunting has become very popular, and some sites are beginning to suffer because of their popularity. Local Councils may have passed bylaws that restrict the amount you can collect at one site, or a private landowner may not appreciate yet

another teenage fossil freak leaving the gates open on their way through a farm. In extreme cases, some spots where fossils are known to be very good have actually been made into 'SSSI's (Sites of Special Scientific Interest) or RIGS (Regionally Important Geological and Geomorphological Sites) to protect them for the future. It is illegal to collect anything in a SSSI. This is one of the reasons I would suggest joining a local club until you are ready to 'go it alone' – a good club will always ask permission to collect, and you may even get to see sites that you would not be able to access alone.

Check out:

English Nature is one of the organisations responsible for naming and protecting SSSI and RIGS; <http://www.english-nature.org.uk/speciallink.htm>

Here ends part 1.

We have looked at the preparation that you can do before you even leave the house, as well as how to stay safe when out in the field. You can now go and browse through museums, check out geological maps and scour the Internet as you plan your first expedition....

Part 2 of 'Collect your own fossils' will follow next week, and takes you from the front door to your first fossil including:

How to use your tools

Hammers, chisels and big lumps of rock

Wrapping for transport

101 uses for tissues and Tupperware

Collecting information

What, where and when – could you remember 10 years on?

Know what to look for

Getting your eye in, how to be patient and looking for clues

Part 3 will deal with organising your collection, cleaning and conservation as well as storage and display techniques