Peterborough Geological and Palaeontological Group

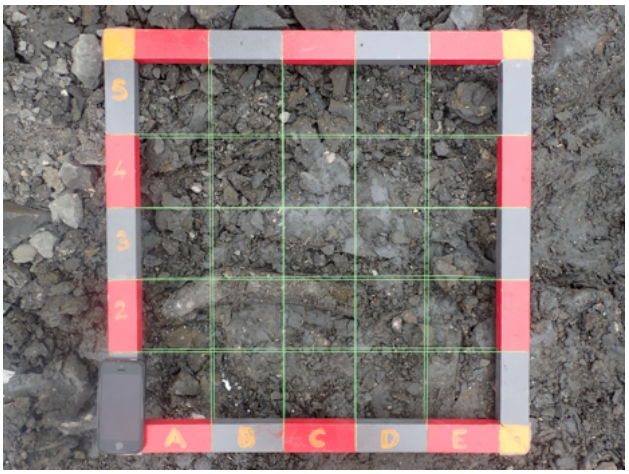
Some finds made by our members

Although the Peterbrough Geological and Palaeontological Group has been set up only recently, our members have been collecting fossils for many years as volunteers for Peterborough Museum and Art Gallery and as members of the Stamford and District Geological Society.

The Scunthorpe Pliosaur

This very rare find was made in 2017 in a quarry in North Lincolnshire. We excavated the specimen carefully and systematically, and it has been donated to North Lincolnshire Museum in Scunthorpe where it will become the prime exhibit in a planned new display. Funds for its preparation were raised from grants from the Palaeontological Association, the Geologists Association, the Yorkshire Geological Society and donations from elsewhere.

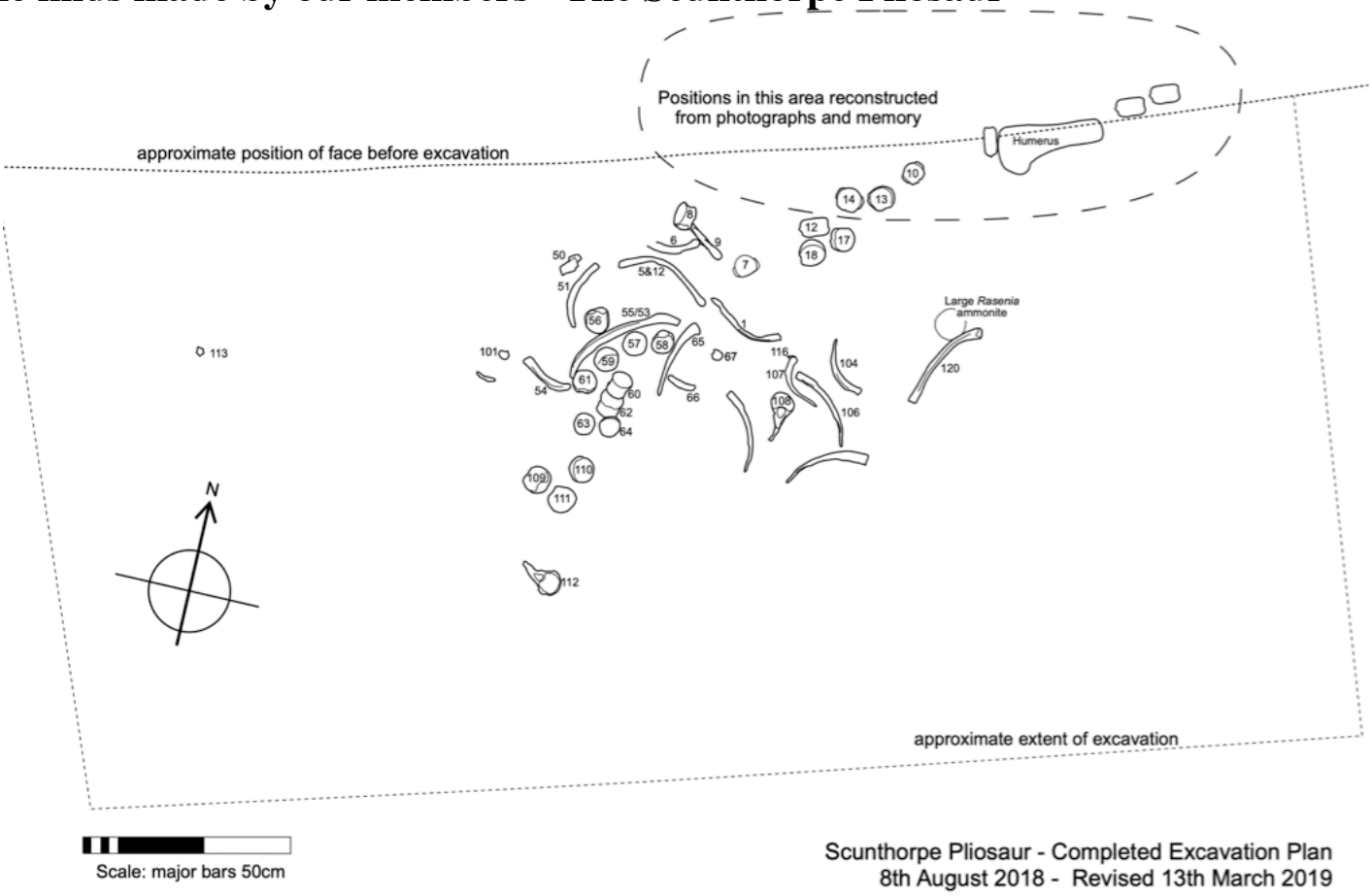
Removing the overburden. Cemex and Alf Kitching Ltd were of great help to us, and provided a digger and driver to help dig down to the be in which the bones are found



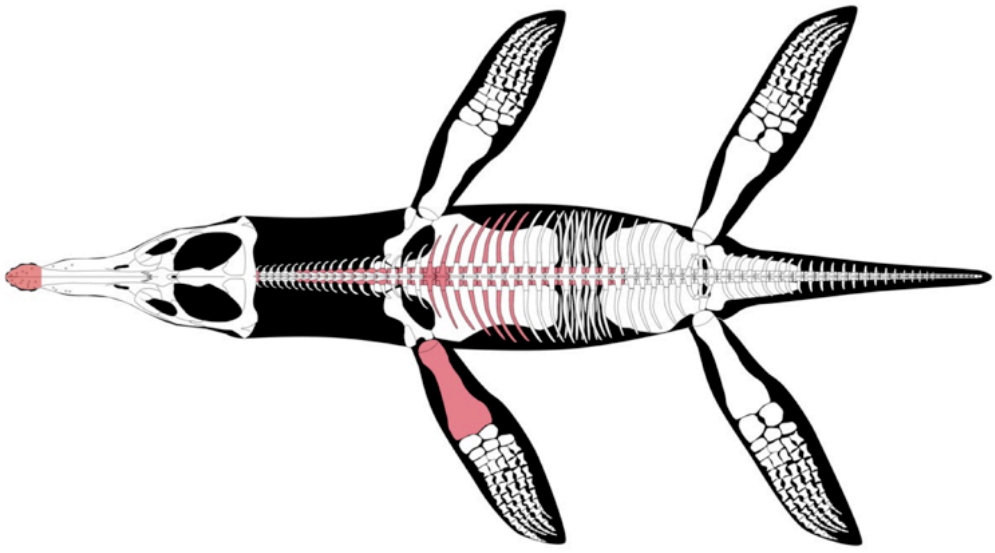
Accurate recording of the layout of the bones is important as it helps to tell the story of what happened to the huge carcase as it lay on the sea floor 160 million years ago.

We took many photographs and used this reference grid to sketch the bones in place before lifting them

Some finds made by our members - The Scunthorpe Pliosaur



The completed plan showing the bones as they lay on the sea floor.



The bones we found are shaded red. This may not look like much, but it is one of the most complete large pliosaurs ever found.
Piosaurs were awesome predators up to 16 meters long and dominated the seas for a hundred million years. Although this is relatively small for a pliosaur, it still measures 8 meters long - bigger than the largest crocodile today!

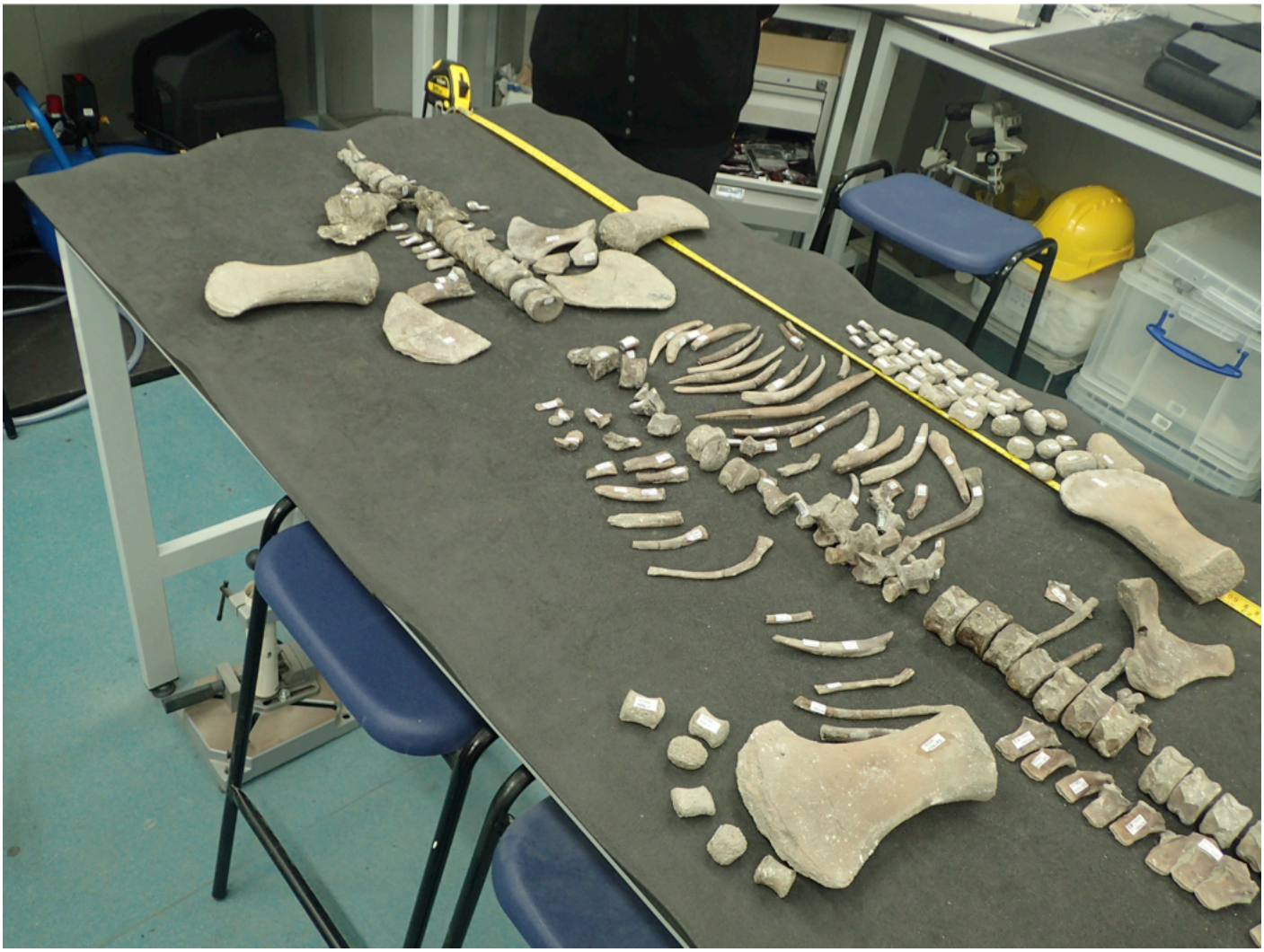
Some finds made by our members - The Must Farm *Cryptoclidus*

‘Iris’ - the Must Farm *Cryptoclidus*

During a field trip of Peterborough Museum volunteers, one of our member found bones of a long-necked plesiosaur called *Cryptoclidus*. With the support of Forterra, we arranged a systematic excavation.

Each bone was numbered, recorded and photographed before lifting.

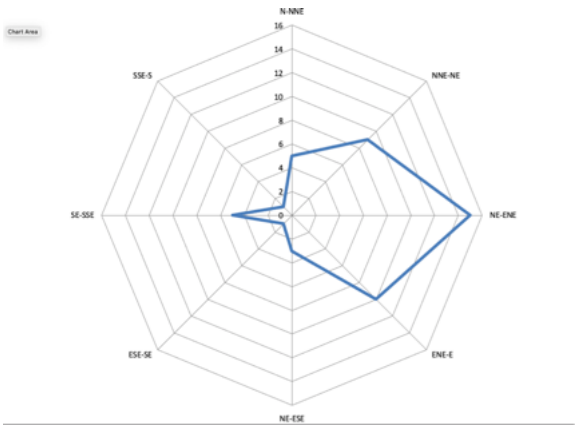
This turned out to be the remarkably complete specimen of a young animal. The bones were taken to Peterborough Museum where they could be cleaned and repaired by museum volunteers.



Some finds made by our members - The Must Farm *Cryptoclidus*

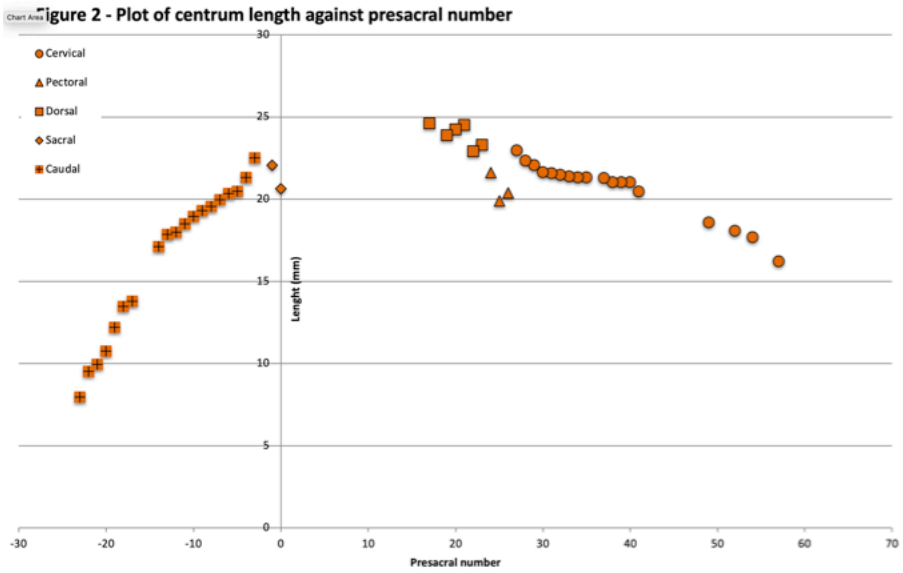
Bones of the skull.

Plesiosaur skulls are very fragile and rarely preserved. This is a particularly good example, especially as it is from a juvenile animal.



Other records were made during the excavation, such as the orientation of belemnites showing the direction of water currents flowing over the carcase.

The more data we collect, the more scientific work can be carried out on the specimen. We are looking into a window of time in the deep past, and the more we can find out, the more detailed the story of what happened 160 million years ago becomes.



This specimen will be the subject of an in-depth scientifiic study recording the methods used to excavate and conserve the bones, and detailed analysis which will add to our knowledge of this species, and plesiosaur evolution in general.

Some finds made by our members - *Ophthalmosaurus*

Unfortunately not all of our specimens could be excavated systematically. This specimen of an the ichthyosaur *Ophthalmosaurus* had been smashed by quarry operations before we found it. Nevertheless we were able to recover about 30% of the specimen by digging through clay which had been deposited in another part of the quarry.

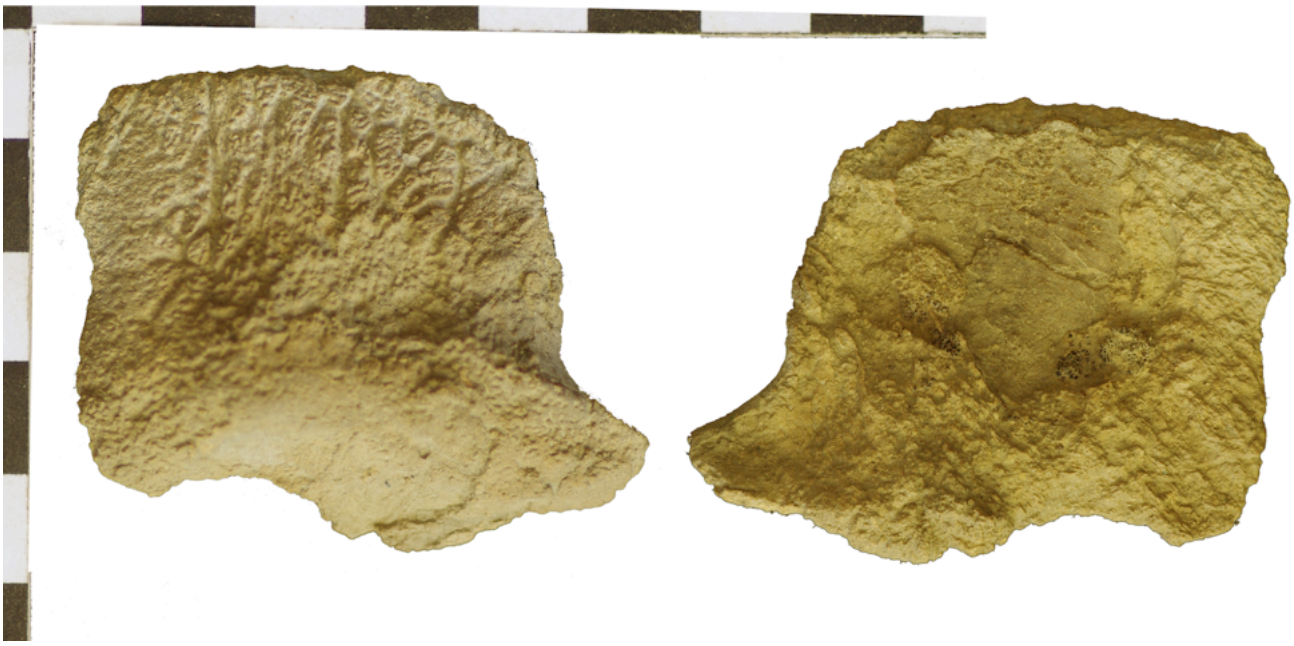
We spent many hours over several days digging through a clay bank looking for bones. We recovered nearly 400 bone fragments, many of which we were able to piece together.

This is the atlas-axis complex, the pair of bones which connect the skull to the spine.

Part of the lower jaw

Some finds made by our members - Not all are so spectacular!

Not all finds are of spectacular marine reptiles. The clay deposits which are the main localities for our field trips are rich in fossils of all sorts. Some of them seem rather undewhelming at first, but turn out to be rather important.



This rather dull-looking bone turned out to be a scute (a bone set in the skin like the knobs on the back of a crocodile) from a type of dinosaur called an ankylosaur. Most of the clay around Peterborough is Oxford Clay, which is famous for its marine reptiles. Dinosaur bones are extremely rare. It has been donated to the Wollaton Hall Natural Histoy Museum in Nottingham and is the subject of a scientific article which is being written by a specialist in ankylosaurs.

Even common fossils tell a story

Not all fossils are exceptional or very rare. All fossils, even the most common tell us a story,.

This is an oyster called *Gryphea*, one of the most common of all fossils. This one has grown on the shell of an ammonite and taken on its shape. Scientists refer to this as a bioimmuration.

The specimen was donated to New Walk Museum in Leicester.

Some finds made by our members - Not all are so spectacular!

An ammonite with an unusual lappet.
Only the flattened shell has been preserved, which is common for most shelly fossils from clays but makes them almost impossible to collect. They crumble away as soon as they are exposed to air, which makes it important to photograph them as soon as they have been uncovered.

The lappet is the prong sticking out at the front of the shell and is found only in male individuals. This one has a rather odd curl at the end, which has not been seen before in this kind of ammonite.

Crushed ammonites like this can be found in huge numbers by splitting blocks of clay. This shows that it is worth looking closely at even the most common fossils.

Coprolites - fossil poo!
Very common, but very informative. They can tell us what an animal was eating.

The specimen to the right contains fish bones.