Square & Compass Fossil Fayre 2016

Anyone who has studied geology in the UK or who has an interest in fossils will be familiar with Purbeck's Jurassic coastline. Where fragments and larger fossilized remains of sea creatures can be found at places like Kimmeridge, Durlston Bay and Chapmans Pool. In sedimentary rocks from the late Jurassic and early Cretaceous periods. Evidence of dinosaurs and trace fossils of their footprints are regularly uncovered in the local quarries.

EARTH'S HISTORY IS ALMOST A MILLION TIMES LONGER THAN HUMAN HISTORY OF 5,000 YEARS

Cretaceous period

145 - 66 million years ago.
Ending with the extinction of non-avian dinosaurs and three-quarters of plant and animal life when an huge asteroid the size of Mt Everest collided with earth.

Jurassic period

201 - 145 million years ago

500 million Years

The time of abundant fossils allowing the detailed understanding of Earth's History - Trilobites index fossils of the time

Oldest living life forms

3,500 million years - fossilized Stromatolites

Creation of Earth

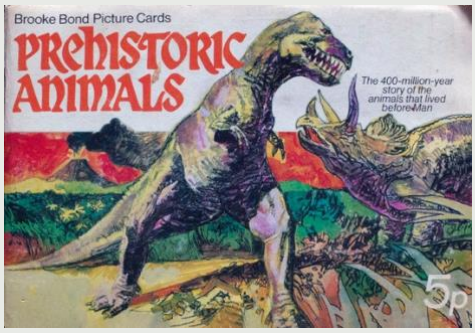
4,5oo million years ago

The Fossil Record

Trev Haysom & Paul Ensom uncover fragments of trees from the lower Purbeck beds that silicified into stone 130 million years ago. *Lander's Quarry, 2016*

The Fossil Record

Tree fragments, *Lander's Quarry, 2011*

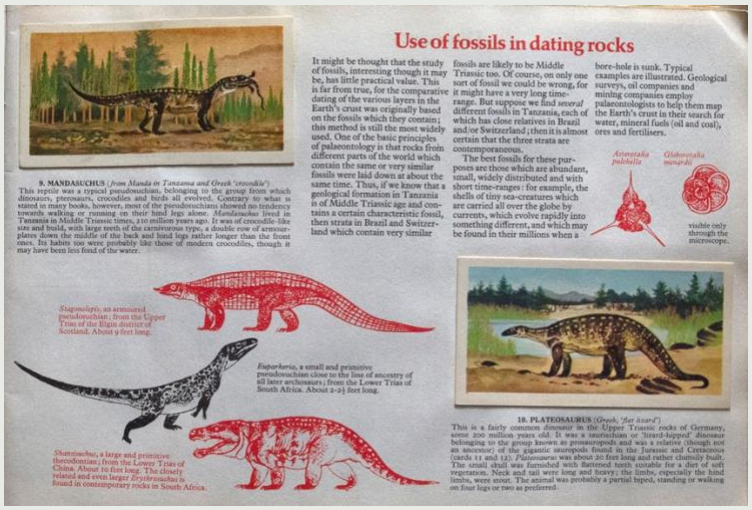


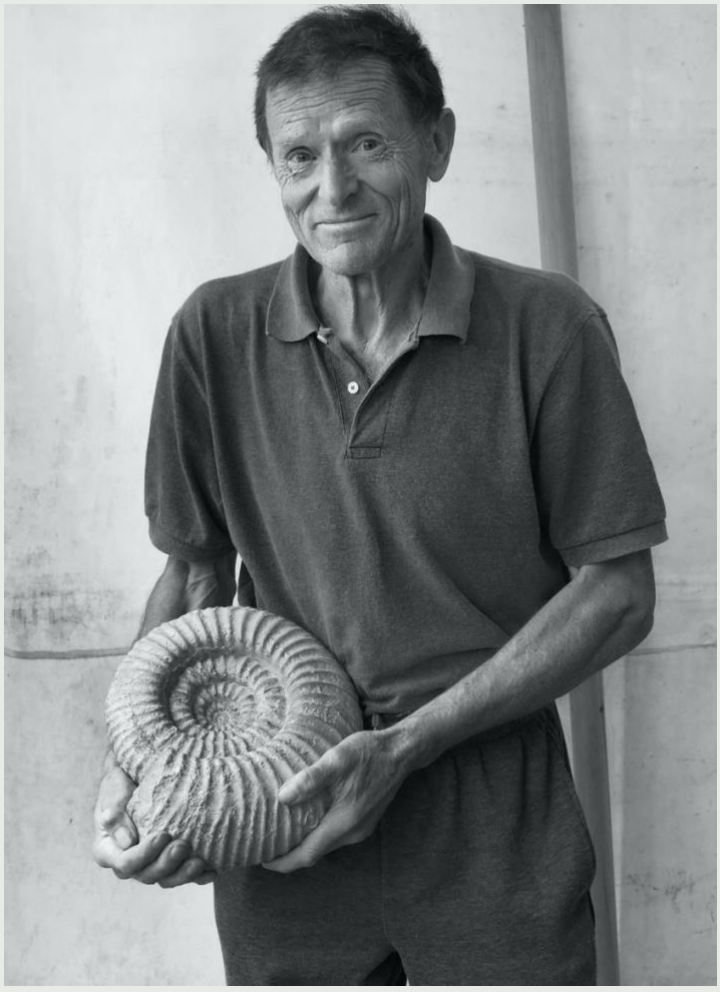
It was long believed by geologists and palaeontologists that non-bird dinosaurs died out gradually over millions of years. Until the 1970's when space travel started producing images of planets across the solar system strewn with ancient impact craters.

Evidence on Earth in the Cretaceous-Tertiary KT boundary - a layer of clay - led geologists and scientists to identify a *mass extinction event* after discovering an irregular level of the metal iridium. A large impact crater was first discovered in 1978 in the Gulf of Mexico by geologists surveying for oil but it was not until 1991 the joint detective work of geologists, palaeontologists, astronomers, geophysicists and geochemists pieced together all the evidence and located the precise point of impact.

It was universally agreed in 2010 that the impact of an asteroid colliding with earth at Chicxulub underneath the Yucatan Peninsula in Mexico, its vast crater hidden by nature, had caused the *mass extinction* and not radiation from a supernova or volcanism.

A trace fossil *an impression of a Iguanodon's footprint, a number of which have been discovered by the quarrymen over the years.* Blacklands Quarry 1992





David Sole, 2016
With an ammonite from the Portland beds at Chapmans Pool found in the1980's.

Pavlovia Sp. In limestone matrix,
Upper Kimmeridge clays, Chapmans Pool

Charles Newman, 2016
Host of the annual Square and Compass Fossil Festival handling recent finds.

Square & Compass Museum

The Fossil Record

Fossil Fish - Lepidotes, Peveril,
Middle Purbeck Beds.
Discovered and prepped by Andrew Webster, 2014

Tree remains silicified to stone.