



GCR block - Palaeontology (PALENT)

Block Description

Visit <https://jncc.gov.uk/gcr-site-list>, for more information on GCR blocks and sites
For Palaeontology GCR block descriptions and GCR site lists,
visit <https://jncc.gov.uk/gcr-blocks-palaeontology>

Introduction

In contrast to the manner in which most invertebrate fossils are represented in the GCR, fossils of vertebrates, arthropods (except trilobites) and terrestrial plants do have their own dedicated GCR Blocks, because of the relative rarity of the fossil material. The GCR sites selected for the Palaeoentomology GCR Block represent the British fossil record of the insects from the emergence of the group during the Devonian Period (which ranged from about 395 to 345 million years ago (Ma)). Other fossil arthropods (except trilobites) are afforded their own GCR Block, 'Arthropods'. **See Arthropoda (APD)**.

Palaeontological characteristics

Today, creatures as seemingly diverse as barnacles, beetles, fleas, flies, crabs, trilobites and woodlice can all be recognised as arthropods and share a unifying body plan –a tough exoskeletal cuticular covering (carapace) to a segmented body and paired jointed legs.

After the emergence of the group about 500 Ma, by 400 Ma the arthropods were not only well-established in the marine environment but had made the difficult transition to life on land, and by around 320Ma, the arthropods had already made the transition to the air –the first creatures on Earth to do so. The subsequent success of flying insects had a huge impact of life on land, their 'hand-in-hand' evolution with flowering plants in late Mesozoic times led to a transformation of terrestrial vegetation.

Taxonomically the arthropod group has been recognised since the mid 19th century and includes insects (Devonian–Recent range), crustaceans (Cambrian to Recent), myriapods (centipedes and millipedes), chelicerates (spiders and scorpions), ostracods (Cambrian–Recent), and extinct groups such as trilobites (Cambrian–Permian), and eurypterids (Ordovician–Permian).

Palaeogeography

The palaeogeography of each relevant geological period since the Devonian can be found elsewhere on the pages of this website.

GCR site selection

Owing to the rarity of fossil insect material, this GCR Block represents something of a special case with regard to including all of the sites yielding, or that have yielded, significant types and quantities of scientifically important material that help elucidate the evolution of the main insect groups.