



Tertiary Palaeobotany (TER-PALBOT)

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 Tertiary Palaeobotany GCR Block represent the British fossil record of vascular land plants during the Tertiary sub-Era (which spanned from 65 to 2 million years ago (Ma), which was preceded by the Mesozoic Era). This was a time of further evolution and diversification of plants, with the vegetation becoming dominated by the flowering plants. At the end of the Cretaceous Period (the last Period of the Mesozoic era) there was a mass extinction event, but this did not have a significant or long term effect on plant life. The end of the Tertiary sub-Era is marked by the onset of the 'Great Ice Age' (Quaternary Period). Quaternary floral change in the British fossil record is recorded in Quaternary GCR sites (predominantly represented in the pollen records).

Earlier fossil plants are afforded their own GCR Blocks, 'Palaeozoic Palaeobotany' and 'Mesozoic Palaeobotany'. **See Palaeozoic Palaeobotany (PAZ-PALBOT) and Mesozoic Palaeobotany (MES-PALBOT)**. See also Quaternary GCR Blocks.

Palaeontological characteristics

From the earliest inter-tidal vegetation of the Silurian Period (425 million years ago), plants progressively became established on land, and eventually developed into the lush tropical wetland forests of the Late Carboniferous Period (300 million years ago)

The end of the Palaeozoic Era (c. 250 million years ago) was a time of major change in land vegetation when traumatic environmental events caused rapid extinction of many plant groups. However, a few groups survived through into the Mesozoic Era and from these the gradual development of modern vegetation can be traced through the fossil record. In late Mesozoic times, the first evidence of flowering plants can be found. Although the end-Cretaceous mass extinction had significant effects on faunas, it did not significantly affect plant life, since spores and seeds were able to germinate when more favourable conditions occurred after the extinction event. Of the plant groups that did die out at this point (e.g. the bennettites) most were suffering a marked decline during the preceding Cretaceous Period, probably as a result of competition from flowering plants (angiosperms). By the Tertiary sub-Era, much of the vegetation was dominated by flowering plants like those of the present day.

Britain has a particularly fine palaeobotanical record for early Tertiary deposits (e.g. the London Clay and there are many sites internationally important for floras of these ages.

Palaeogeography

The fossil plant material has been useful in palaeoclimatic and palaeoenvironmental reconstructions as an indicator of the geological past. The palaeogeography of each relevant geological period since the earliest terrestrial vegetation of the Tertiary sub-Era can be found elsewhere on the pages of this website. **See Palaeogene (PGN); Neogene (NEO)**

GCR site selection

Owing to the rarity of fossil plant 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 plant groups.

The sites can be allocated to 5 GCR networks based on distinct plant assemblages associated with different time intervals and/or palaeoenvironmental settings as follows:

- British Triassic palaeobotany
- Jurassic palaeobotany of Yorkshire

- Jurassic palaeobotany of southern England
- Jurassic palaeobotany of Scotland
- British Cretaceous palaeobotany.